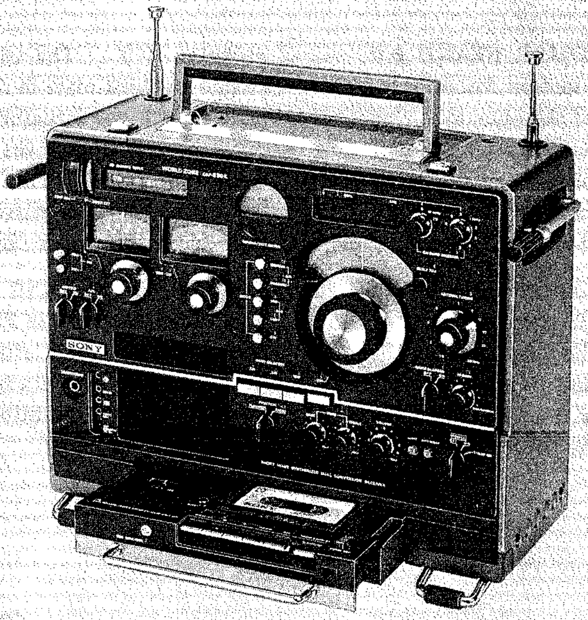
CRF-330K

US Model
Canadian Model
E Model
AEP Model



FM/SW/MW/LW
33-BAND RADIO RECEIVER

SPECIFICATIONS

GENERAL

Power Requirements:
Radio, Recorder: 120 V ac (adjustable to 100, 220, or 240 V)
12 V dc, eight size-D (IEC designation R20) batteries
12 V car battery with Sony Car Battery Cord DCC-9 (optional)

Clock: 1.5 V dc, one size-D battery

Power Consumption: SW: 10 W ac, FM/MW/LW: 6.5 W ac,
in radio operation
SW: 12.5 W ac, FM/MW/LW: 9 W ac,
in radio and recorder operation

Speaker: 12 cm (4¾ inches)

Clock: QUARTZ clock

Input: AUX IN (mini jack) 1
Maximum sensitivity 4.4 mV (–45 dB) at 50 mW output
Imput impedance 5 kΩ

Outputs: Earphone (mini jack) 1
For 8 Ω earphone
HEADPHONES (phone jack) 1
For 8 Ω headphones
Recording (mini jack) 1
Output level 0.8 mV (–60 dB)
Output impedance 1 kΩ

Control Jack: TIMER OUT (mini jack) 1

Dimensions: Approx. 451 (w) x 349 (h) x 207 (d) mm
17¾ (w) x 13¾ (h) x 8⅛ (d) inches
(including projecting parts and controls with the recorder retracted to the set)

Weight: Approx. 15.4 kg, 33 lb 15 oz
(including batteries)

RADIO SECTION

Frequency Range:
FM_2: 87.5 – 108 MHz (3.43 – 2.78 m)
FM_1: 76 – 90 MHz (3.95 – 3.33 m)
SW: 1.6 – 30 MHz (187 – 10 m)
MW: 530 – 1,605 kHz (566 – 187 m)
LW: 150 – 400 kHz (2,000 – 750 m)

Intermediate Frequency:
FM: 10.7 MHz
SW-1st: 45.145 MHz
SW-2nd: 455 kHz
MW/LW: 455 kHz

Sensitivity:
FM: 1.8 μV (5 dB), S/N = 30 dB
SW: 0.7 μV (–3 dB), S/N = 6 dB, at 10 MHz
MW: 32 μV/m (30 dB/m), S/N = 6 dB, built-in ferrite-rod antenna
LW: 57 μV/m (35 dB/m), S/N = 6 dB, built-in ferrite-rod antenna

— continued on next page —

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SONY®

SERVICE MANUAL

Image Rejection:
FM$_2$: 65 dB, at 108 MHz
FM$_1$: 65 dB, at 90 MHz
SW-1st: 90 dB
SW-2nd: 65 dB, at 10 MHz
MW: 55 dB, at 1,605 kHz
LW: 80 dB, at 360 kHz

Selectivity:
FM: Better than 70 dB
(± 400 kHz off resonance)
SW/MW/LW:
–60 dB at NORMAL
(± 8 kHz off resonance)
–60 dB at NARROW
(± 6 kHz off resonance)

Antennas:
FM: Telescopic antenna, external antenna terminals (75 ohms)
SW: Telescopic antenna, external antenna terminals (50 – 75 ohms)
MW/LW:
Built-in ferrite-rod antenna, external antenna terminals (high impedance)

TAPE RECORDER SECTION

Recording System: 2-track 1-channel monaural

Fast Winding Time: Approx. 1 min. 50 sec. with Sony Cassette C-60

Frequency Response: 90 – 10,000 Hz

SECTION 1
OUTLINE

1-1. TAPE RECORDER TIMER STAND BY MECHANISM

This set is equipped with a TIMER STAND BY mechanism in the tape recorder section for an automatic recording during absence of the operator. This mechanism is intended to prevent the pinch roller and recording tape from deforming when the pinch roller is left pressed against the capstan and does not rotate for a long time in the stand-by mode.

Fig. 1 shows the mechanism condition when TIMER STAND BY is set up. In this condition and when the power supply is applied by TIMER, the motor starts to rotate and the shut-off lever moves in the direction Ⓐ . Accordingly, the lever moves in the direction Ⓑ and it pushes the trigger plate in the direction Ⓒ . The trigger plate's protrusion now pushes the lock plate in the direction Ⓓ and the lock plate releases the actuator which is locked at position※. Now the actuator moves in the direction Ⓔ and the reset arm positions as shown in Fig. 2. In this, condition, the lever moves in the direction Ⓑ', but it does not afect to the actuator.

If TIMER STAND BY is set up when the lever positioned as shown in Fig. 3, the lever once moves in the direction Ⓑ" after the time set by TIMER SET, and the lever locks the reset arm and releases the STAND BY condition.

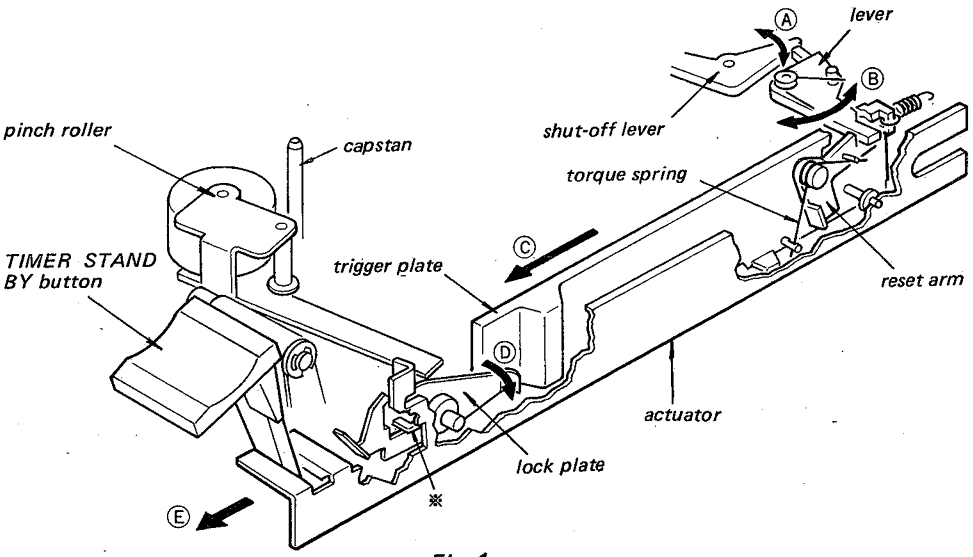


Fig. 1.

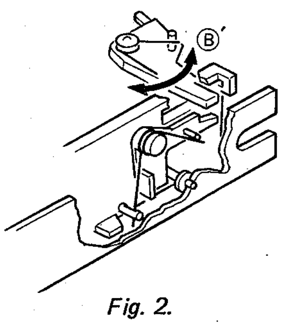


Fig. 2.

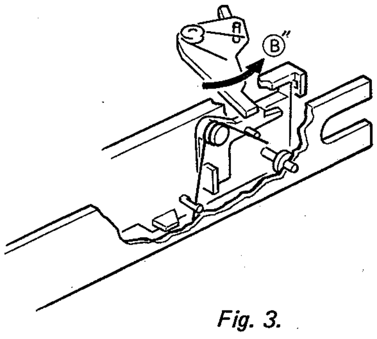


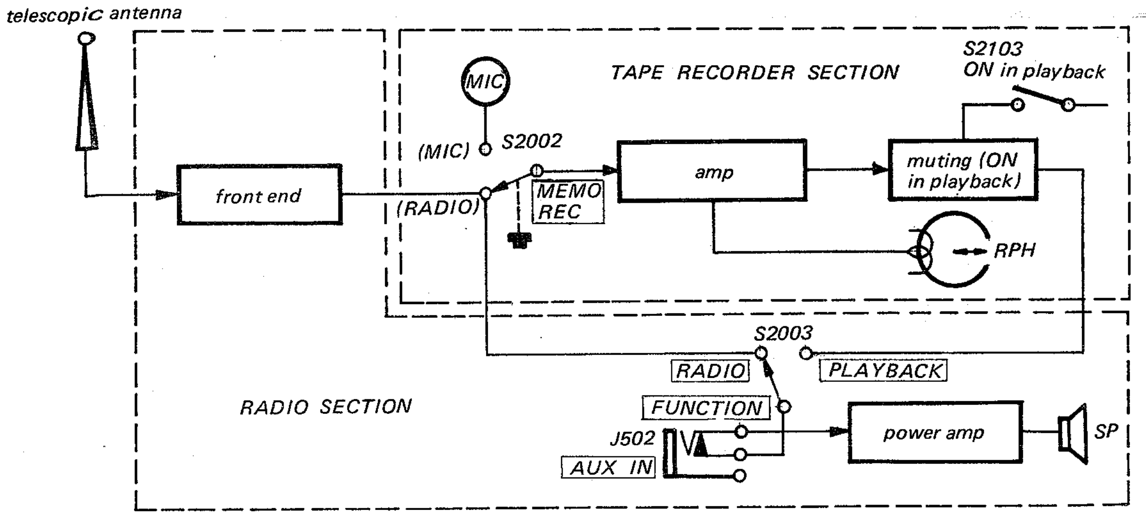
Fig. 3.

1-2. CIRCUIT DESCRIPTION

1) CONNECTION OF TAPE RECORDER AND RADIO

This set is a combination of CRF-320 radio receiver and a cassette tape recorder. With the tape recorder provision, receiving signals can easily be recorded. This set also provides a STAND BY facility combined with a timer clock, and recordings during absence of the operator can be made with ease.

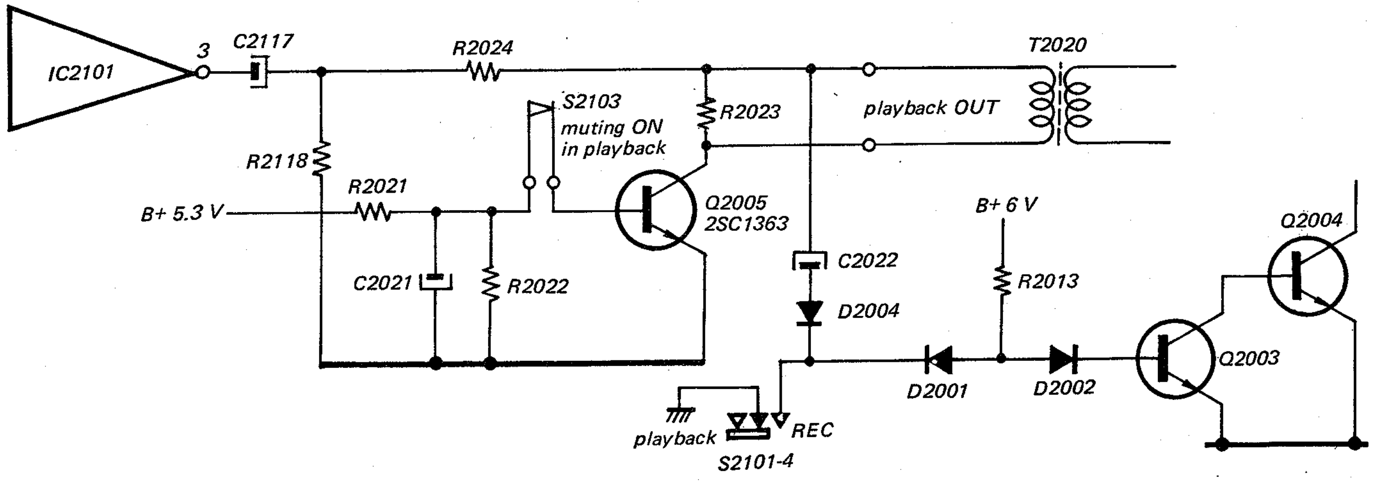
The following diagram shows a simplified signal flow. The recording from the built-in microphone can only be made when MEMO REC switch button is pressed in MIC position. And recording from AUX IN jack J502 cannot be made.


telescopic antenna
TAPE RECORDER SECTION
MIC
(MIC)
S2002
(RADIO)
MEMO REC
front end
amp
S2103
ON in playback
muting (ON in playback)
RPH
S2003
RADIO
PLAYBACK
FUNCTION
RADIO SECTION
J502
AUX IN
power amp
SP

2) RECORD MUTING CIRCUIT

A muting circuit is provided in the output circuit of the tape recorder in the record mode to prevent a hawling from occuring during a record with microphone. The following diagram is the muting circuit of the tape recorder. Except in the playback mode, the muting switch S2103 is in the off position and Q2005 is also in the off state. Accordingly, no signal flows in the transformer T2020 and the output circuit is muted.

When the muting switch S2103 turns on in the playback mode, the output signal from IC2101 flows in the transformer T2020 and the signal passes to the power amplifier of the radio section. To ensure the muting operation in the record mode, the signal line is grounded through C2022, D2004 and S2101-4.

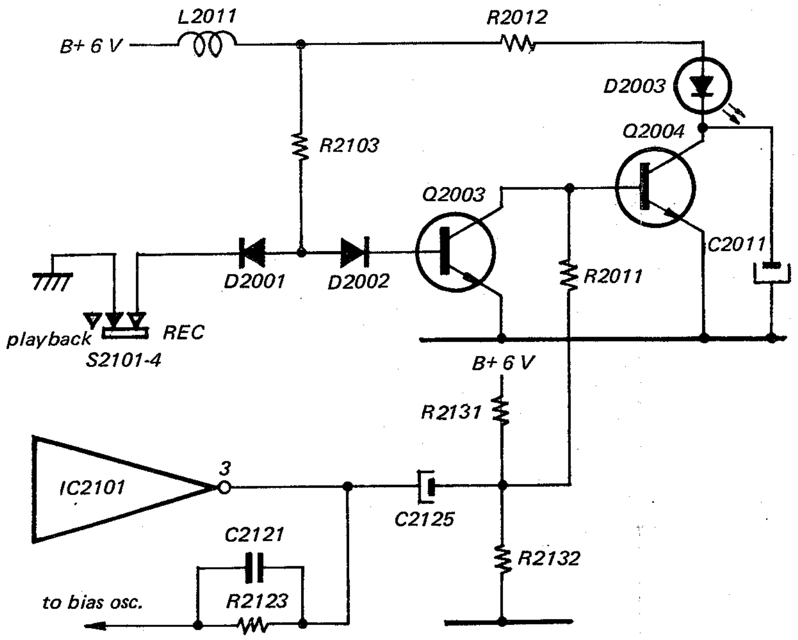

IC2101
3
C2117
R2024
T2020
S2103
muting ON
in playback
R2023
playback OUT
R2118
B+ 5.3 V
R2021
Q2005
2SC1363
B+ 6 V
Q2004
C2021
R2022
C2022
R2013
D2004
Q2003
D2001
D2002
playback
REC
S2101-4

3) LED AMPLIFIER CIRCUIT

In the record mode, a part of the output signal from IC2101 goes through C2125 and R2011 to Q2004. Q2004 amplifies the signal, and the collector current of Q2004 turns D2003 (REC INDICATOR) on and the record mode is visually identified.

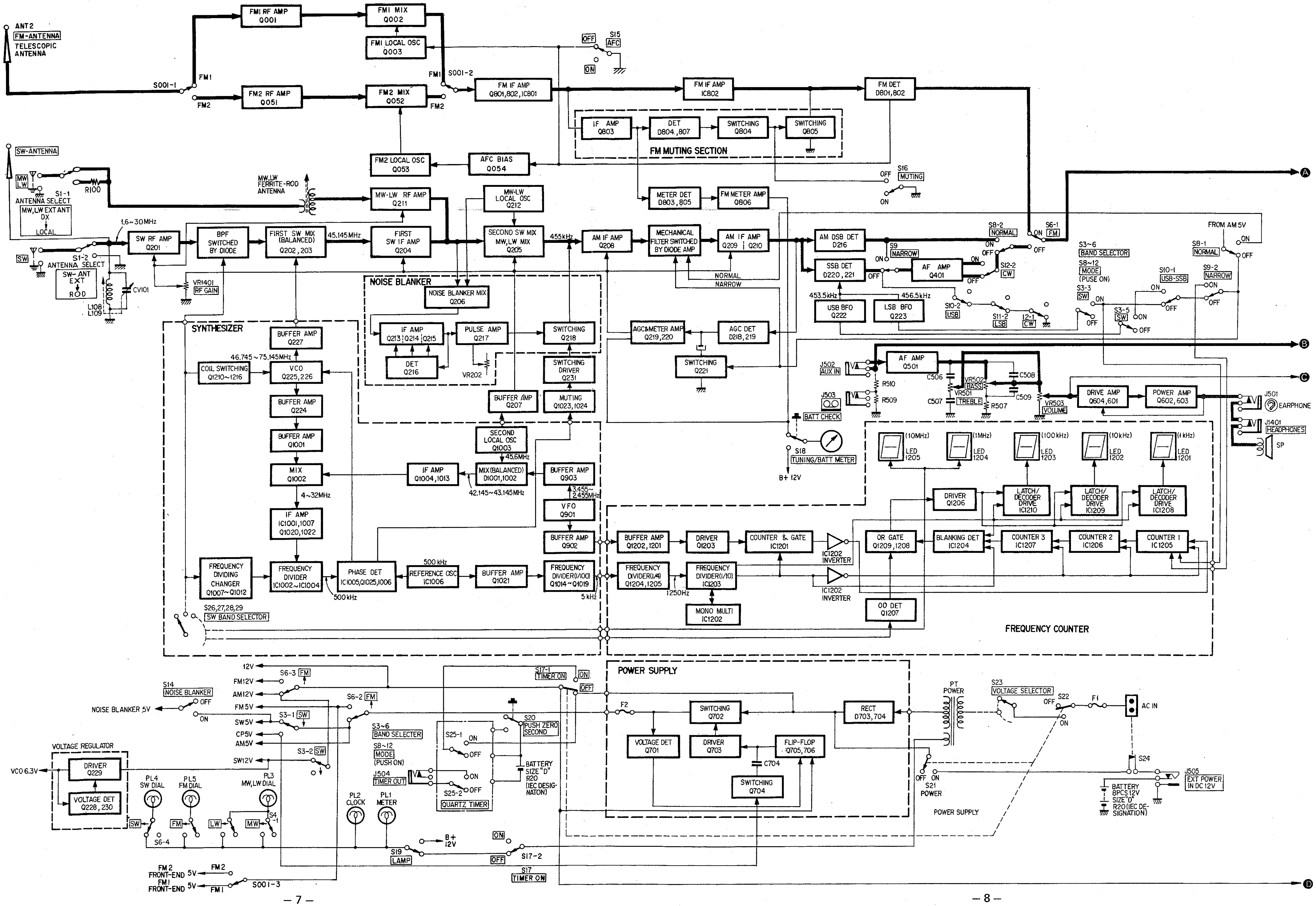
In the playback mode, this LED amplifier is muted because of unnecessity of the LED indication. In the playback mode, the bias is applied to Q2003 through R2103 and D2002 to turn on Q2003. Accordingly, the base of Q2004 is grounded and D2003 turns off.

In the record mode, the bias circuit of Q2003 is routed to the ground through D2001 and S2101-4, and Q2003 turns off. Consequently, Q2004 turns on. Q2004 is operating in class B, and D2003 lights up only when audio signals are applied to the base of Q2004 to indicate the record mode.

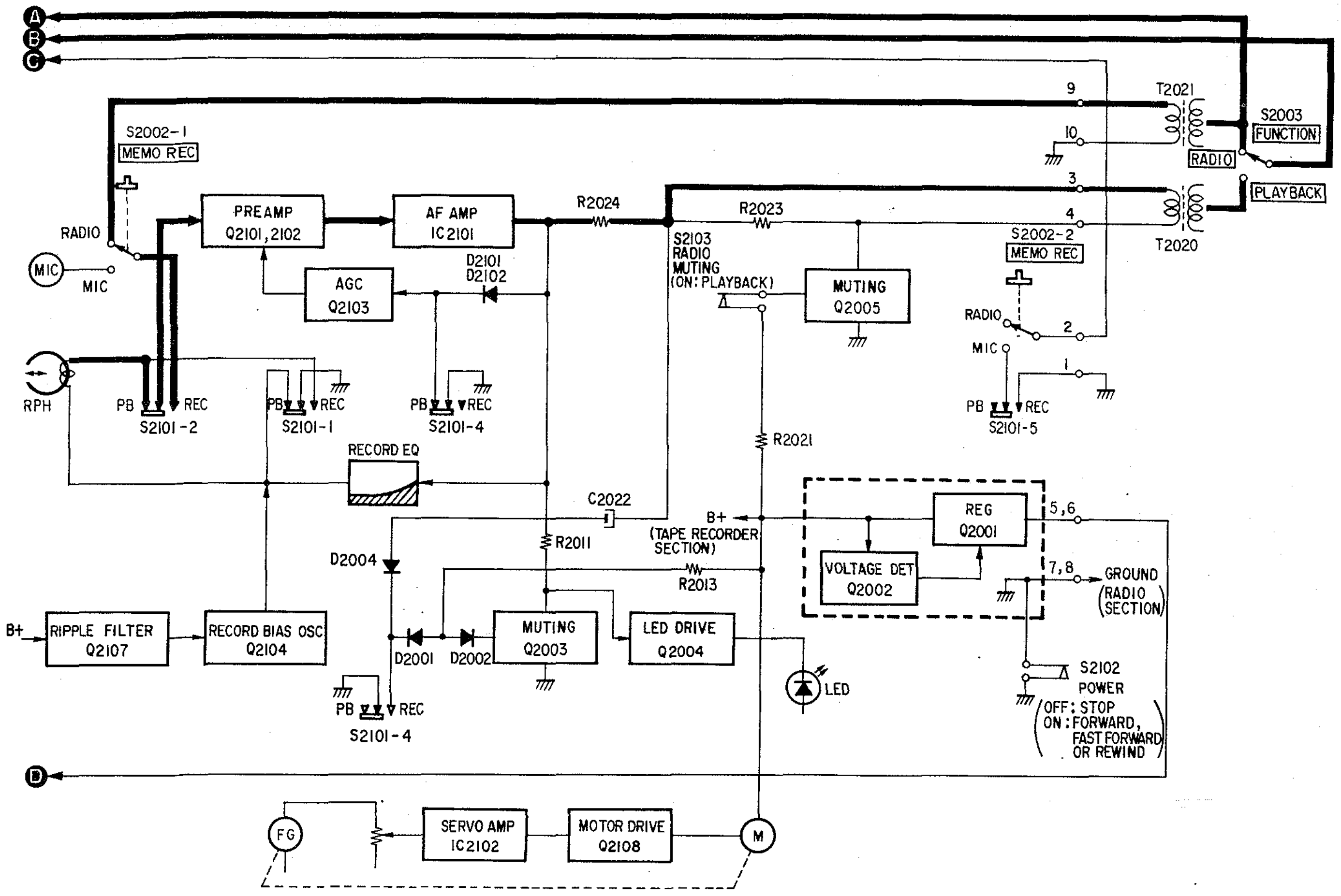

L2011
R2012
B+ 6 V
D2003
Q2004
R2103
Q2003
C2011
D2001
D2002
R2011
playback
REC
S2101-4
B+ 6 V
R2131
IC2101
3
C2125
C2121
R2132
to bias osc.
R2123

1-2. BLOCK DIAGRAM

1) Radio Section

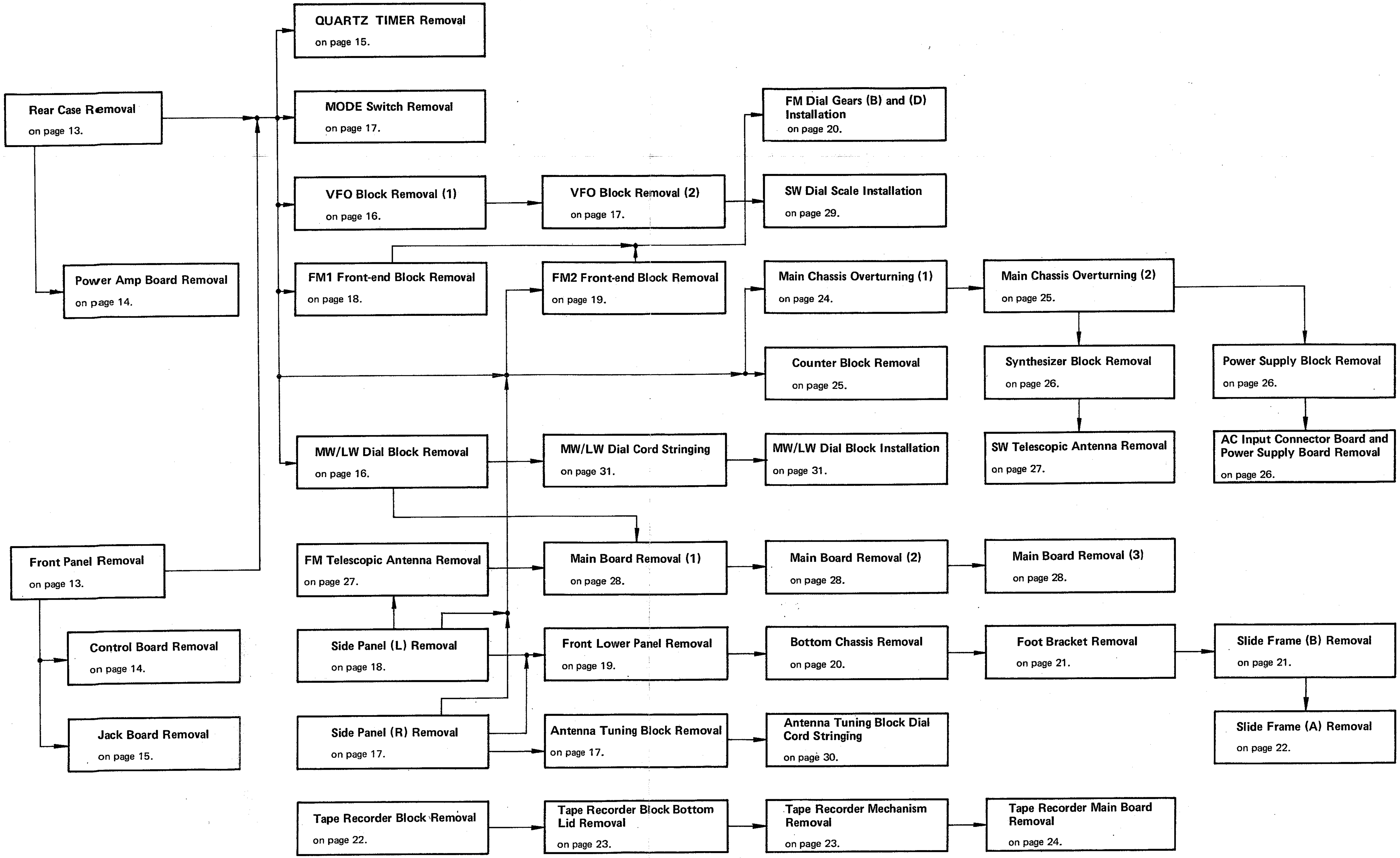

ANT2
FM-ANTENNA
TELESCOPIC ANTENNA
FM1 RF AMP Q001
FM1 MIX Q002
FM1 LOCAL OSC Q003
FM2 RF AMP Q051
FM2 MIX Q052
S001-1
S001-2
FM1
FM2
FM IF AMP Q801,802,IC801
FM IF AMP IC802
FM DET D801,802
S15 AFC
OFF
ON
IF AMP Q803
DET D804,807
SWITCHING Q804
SWITCHING Q805
FM MUTING SECTION
FM2 LOCAL OSC Q053
AFC BIAS Q054
S16 MUTING
METER DET D803,805
FM METER AMP Q806
SW-ANTENNA
MW LW
R100
S1-1 ANTENNA SELECT
MW,LW EXT ANT
DX
LOCAL
MW,LW FERRITE-ROD ANTENNA
MW-LW RF AMP Q211
MW-LW LOCAL OSC Q212
1.6~30MHz
SW
S1-2 ANTENNA SELECT
SW-ANT EXT ROD
SW RF AMP Q201
BPF SWITCHED BY DIODE
FIRST SW MIX (BALANCED) Q202,203
45.145MHz
FIRST SW IF AMP Q204
SECOND SW MIX MW,LW MIX Q205
455kHz
AM IF AMP Q208
MECHANICAL FILTER SWITCHED BY DIODE AMP
AM IF AMP Q209 Q210
AM DSB DET D216
SSB DET D220,221
AF AMP Q401
USB BFO Q222
LSB BFO Q223
453.5kHz
456.5kHz
S8-2 NORMAL
S9 NARROW
S12-2 CW
S6-1 FM
S3~6 BAND SELECTOR
S8~12 MODE (PUSE ON)
S3-3 SW
S3-5 SW
S10-1 USB-SSB
S10-2 USB
S11-2 LSB
S12-1 CW
S8-1 NORMAL
S9-2 NARROW
FROM AM 5V
NORMAL
NARROW
VR1401 RF GAIN
CV101
L108
L109
NOISE BLANKER
NOISE BLANKER MIX Q206
IF AMP Q213 Q214 Q215
PULSE AMP Q217
SWITCHING Q218
DET Q216
VR202
SWITCHING DRIVER Q231
AGC&METER AMP Q219,220
AGC DET D218,219
SWITCHING Q221
BUFFER AMP Q207
MUTING Q1023,1024
SYNTHESIZER
BUFFER AMP Q227
46.745~75.145MHz
COIL SWITCHING Q1210~1216
VCO Q225,226
BUFFER AMP Q224
BUFFER AMP Q1001
MIX Q1002
4~32MHz
IF AMP IC1001,1007 Q1020,1022
SECOND LOCAL OSC Q1003
45.6MHz
IF AMP Q1004,1013
MIX(BALANCED) D1001,1002
42.145~43.145MHz
BUFFER AMP Q903
3.455~2.455MHz
VFO Q901
BUFFER AMP Q902
FREQUENCY DIVIDING CHANGER Q1007~Q1012
FREQUENCY DIVIDER IC1002~IC1004
PHASE DET IC1005,Q1025,1006
500kHz
REFERENCE OSC IC1006
BUFFER AMP Q1021
FREQUENCY DIVIDER(1/100) Q1014~Q1019
5kHz
S26,27,28,29 SW BAND SELECTOR
J502 AUX IN
AF AMP Q501
R510
R509
C506
C507
VR502 BASS
VR501 TREBLE
R507
C508
C509
VR503 VOLUME
DRIVE AMP Q604,601
POWER AMP Q602,603
J501 EARPHONE
J1401 HEADPHONES
SP
J503
BATT CHECK
S18 TUNING/BATT METER
B+ 12V
(10MHz) LED 1205
(1MHz) LED 1204
(100kHz) LED 1203
(10kHz) LED 1202
(1kHz) LED 1201
DRIVER Q1206
LATCH/DECODER DRIVE IC1210
LATCH/DECODER DRIVE IC1209
LATCH/DECODER DRIVE IC1208
BUFFER AMP Q1202,1201
DRIVER Q1203
COUNTER & GATE IC1201
IC1202 INVERTER
OR GATE Q1209,1208
BLANKING DET IC1204
COUNTER 3 IC1207
COUNTER 2 IC1206
COUNTER 1 IC1205
FREQUENCY DIVIDER(1/4) Q1204,1205
FREQUENCY DIVIDER(1/10) IC1203
1250Hz
MONO MULTI IC1202
OO DET Q1207
FREQUENCY COUNTER
12V
FM12V
AM12V
FM5V
SW5V
CP5V
AM5V
SW12V
S14 NOISE BLANKER
NOISE BLANKER 5V
S6-3 FM
S6-2 FM
S3-1 SW
S3-2 SW
S3~6 BAND SELECTER
S8~12 MODE (PUSH ON)
J504 TIMER OUT
S17-1 TIMER ON
S25-1
S25-2
QUARTZ TIMER
S20 PUSH ZERO SECOND
BATTERY SIZE "D" R20 (IEC DESIGNATON)
VOLTAGE REGULATOR
VCO 6.3V
DRIVER Q229
VOLTAGE DET Q228,230
PL4 SW DIAL
PL5 FM DIAL
PL3 MW,LW DIAL
S4
S6-4
PL2 CLOCK
PL1 METER
S19 LAMP
B+ 12V
S17-2
S17 TIMER ON
FM2 FRONT-END 5V
FM1 FRONT-END 5V
S001-3
POWER SUPPLY
F2
SWITCHING Q702
RECT D703,704
VOLTAGE DET Q701
DRIVER Q703
FLIP-FLOP Q705,706
C704
SWITCHING Q704
PT POWER
S23 VOLTAGE SELECTOR
S22
F1
AC IN
S21 POWER
POWER SUPPLY
S24
BATTERY 8PCS 12V SIZE "D" R20 (IEC DESIGNATION)
J505 EXT POWER IN DC 12V
A
B
C
D

2) Tape Recorder Section

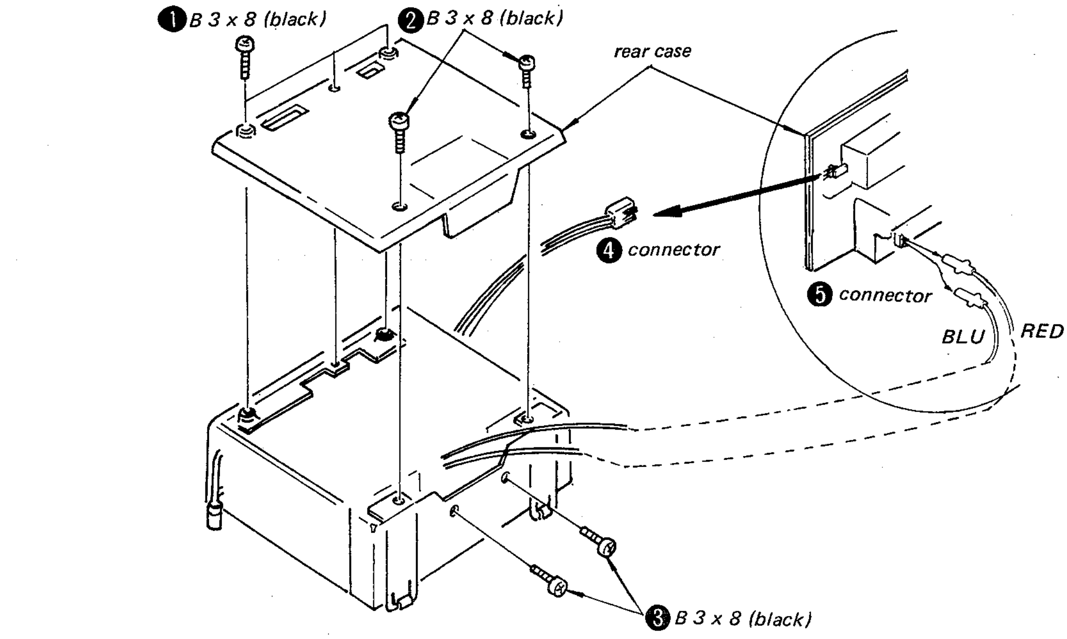

A
B
C
D
9
10
3
4
2
1
5,6
7,8
T2021
T2020
S2003
FUNCTION
RADIO
PLAYBACK
S2002-1
MEMO REC
S2002-2
MEMO REC
RADIO
MIC
MIC
RPH
PB
REC
S2101-2
S2101-1
S2101-4
S2101-5
PREAMP
Q2101,2102
AF AMP
IC2101
AGC
Q2103
D2101
D2102
R2024
R2023
S2103
RADIO
MUTING
(ON: PLAYBACK)
MUTING
Q2005
R2021
RECORD EQ
C2022
B+
(TAPE RECORDER SECTION)
R2011
R2013
D2004
D2001
D2002
MUTING
Q2003
LED DRIVE
Q2004
LED
REG
Q2001
VOLTAGE DET
Q2002
GROUND
(RADIO SECTION)
S2102
POWER
(OFF: STOP
ON: FORWARD, FAST FORWARD OR REWIND)
RIPPLE FILTER
Q2107
RECORD BIAS OSC
Q2104
FG
SERVO AMP
IC2102
MOTOR DRIVE
Q2108
M

SECTION 2
DISASSEMBLY

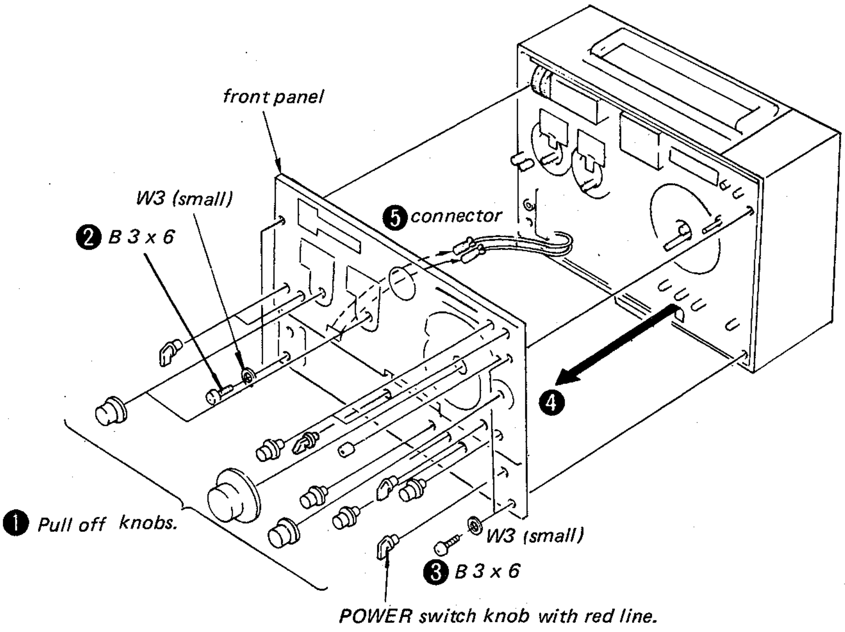
2-1. DISASSEMBLY FLOW CHART


QUARTZ TIMER Removal
on page 15.
Rear Case Removal
on page 13.
MODE Switch Removal
on page 17.
FM Dial Gears (B) and (D) Installation
on page 20.
VFO Block Removal (1)
on page 16.
VFO Block Removal (2)
on page 17.
SW Dial Scale Installation
on page 29.
Power Amp Board Removal
on page 14.
FM1 Front-end Block Removal
on page 18.
FM2 Front-end Block Removal
on page 19.
Main Chassis Overturning (1)
on page 24.
Main Chassis Overturning (2)
on page 25.
Counter Block Removal
on page 25.
Synthesizer Block Removal
on page 26.
Power Supply Block Removal
on page 26.
MW/LW Dial Block Removal
on page 16.
MW/LW Dial Cord Stringing
on page 31.
MW/LW Dial Block Installation
on page 31.
SW Telescopic Antenna Removal
on page 27.
AC Input Connector Board and Power Supply Board Removal
on page 26.
Front Panel Removal
on page 13.
FM Telescopic Antenna Removal
on page 27.
Main Board Removal (1)
on page 28.
Main Board Removal (2)
on page 28.
Main Board Removal (3)
on page 28.
Control Board Removal
on page 14.
Side Panel (L) Removal
on page 18.
Front Lower Panel Removal
on page 19.
Bottom Chassis Removal
on page 20.
Foot Bracket Removal
on page 21.
Slide Frame (B) Removal
on page 21.
Jack Board Removal
on page 15.
Side Panel (R) Removal
on page 17.
Antenna Tuning Block Removal
on page 17.
Antenna Tuning Block Dial Cord Stringing
on page 30.
Slide Frame (A) Removal
on page 22.
Tape Recorder Block Removal
on page 22.
Tape Recorder Block Bottom Lid Removal
on page 23.
Tape Recorder Mechanism Removal
on page 23.
Tape Recorder Main Board Removal
on page 24.

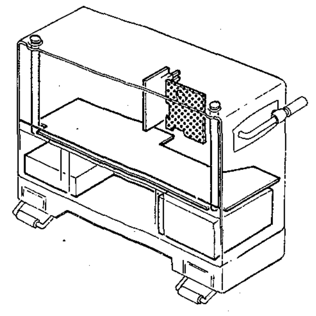
Rear Case Removal

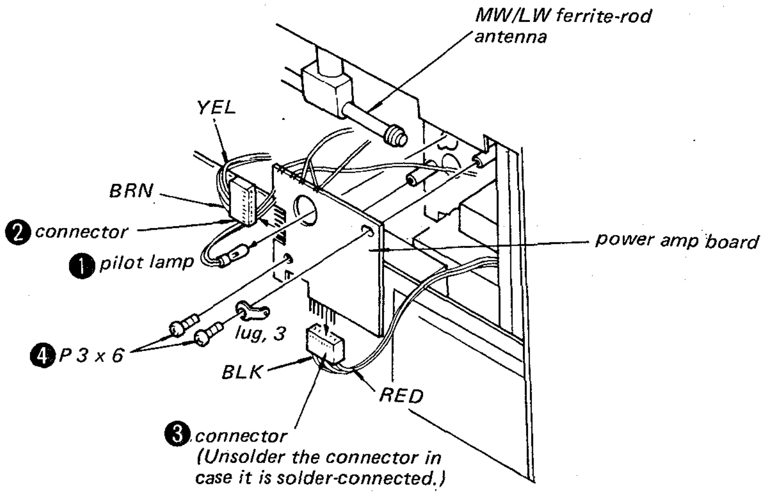

❶ B 3 x 8 (black)
❷ B 3 x 8 (black)
rear case
❹ connector
❺ connector
BLU
RED
❸ B 3 x 8 (black)

Front Panel Removal

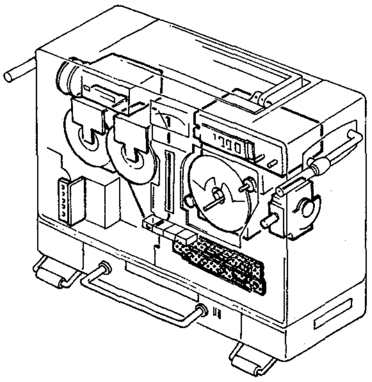

front panel
W3 (small)
❷ B 3 x 6
❺ connector
❹
❶ Pull off knobs.
W3 (small)
❸ B 3 x 6
POWER switch knob with red line.

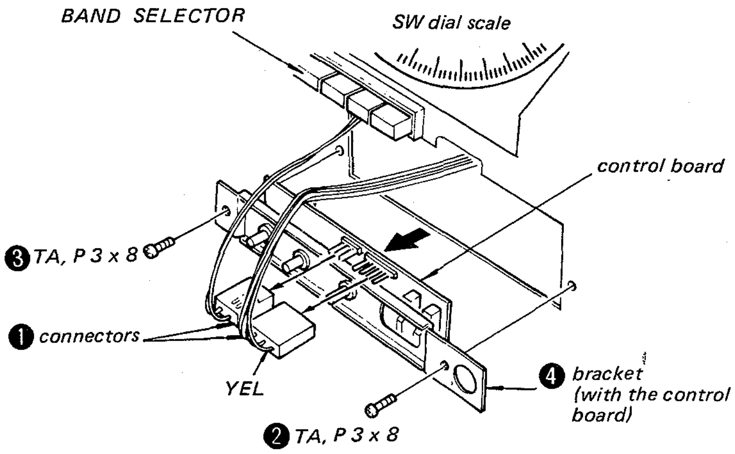
Power Amp Board Removal



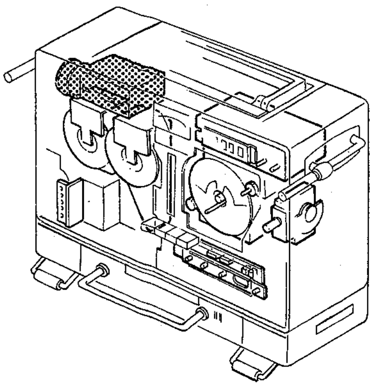

MW/LW ferrite-rod antenna
YEL
BRN
❷ connector
❶ pilot lamp
power amp board
lug, 3
❹ P 3 x 6
BLK
RED
❸ connector
(Unsolder the connector in case it is solder-connected.)

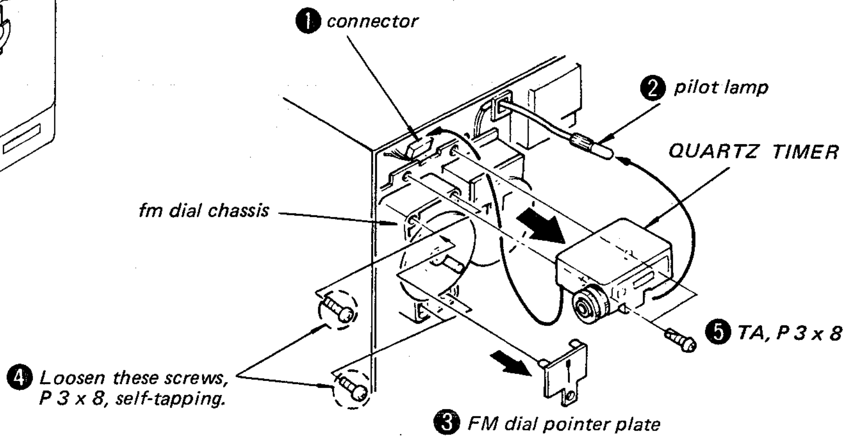
Control Board Removal



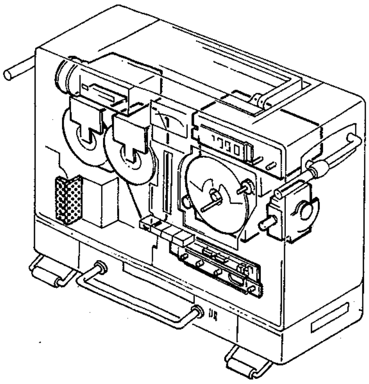

BAND SELECTOR
SW dial scale
control board
❸ TA, P 3 x 8
❶ connectors
YEL
❹ bracket
(with the control board)
❷ TA, P 3 x 8

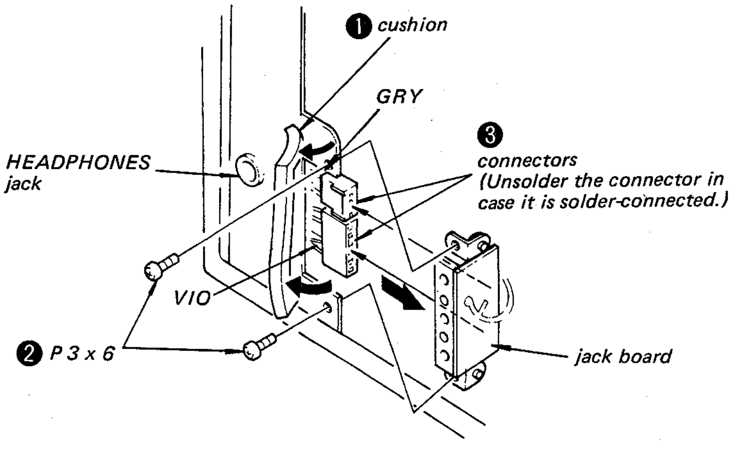
QUARTZ TIMER Removal



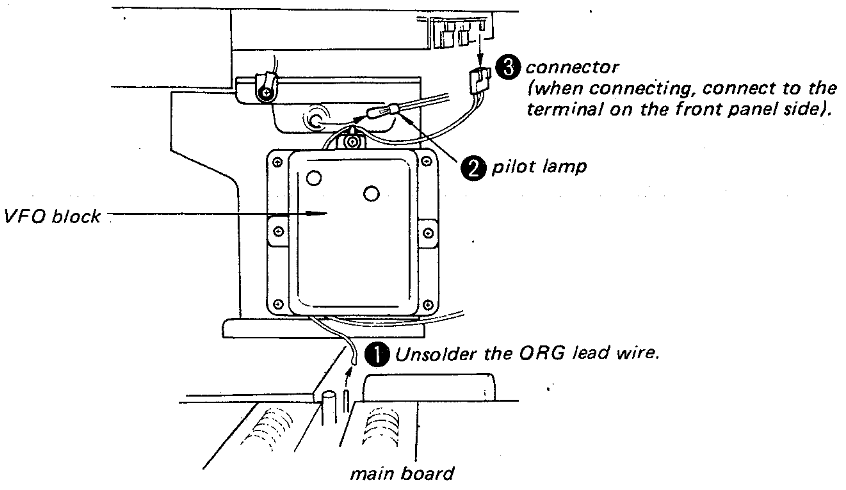

❶ connector
❷ pilot lamp
QUARTZ TIMER
fm dial chassis
❺ TA, P 3 x 8
❹ Loosen these screws, P 3 x 8, self-tapping.
❸ FM dial pointer plate

Jack Board Removal



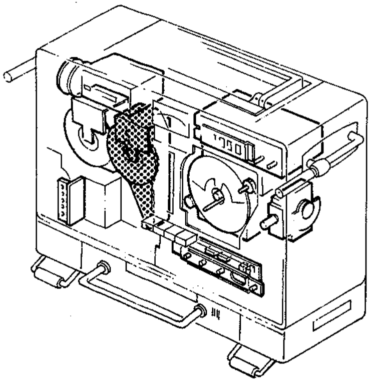

❶ cushion
GRY
❸ connectors (Unsolder the connector in case it is solder-connected.)
HEADPHONES jack
VIO
❷ P 3 x 6
jack board

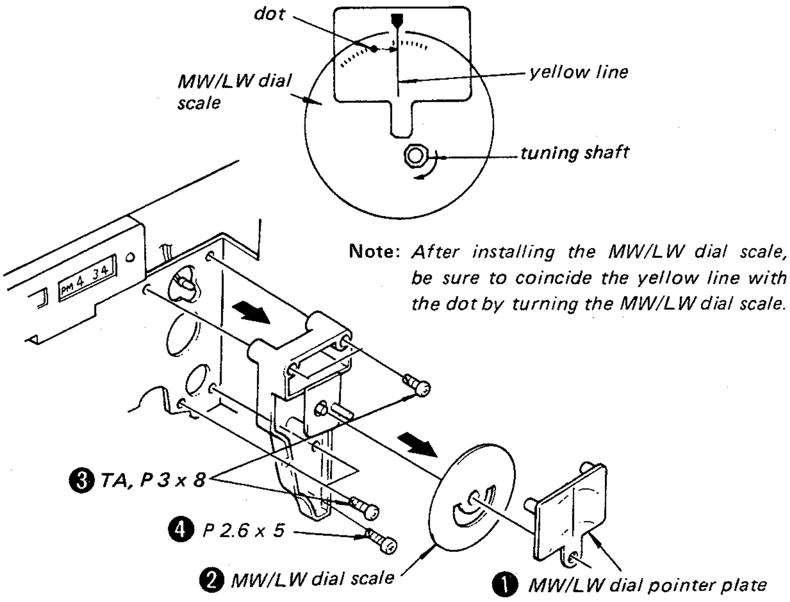
VFO Block Removal (1)


❸ connector
(when connecting, connect to the terminal on the front panel side).
❷ pilot lamp
VFO block
❶ Unsolder the ORG lead wire.
main board

Main Board Removal
on page 28.

MW/LW Dial Block Removal

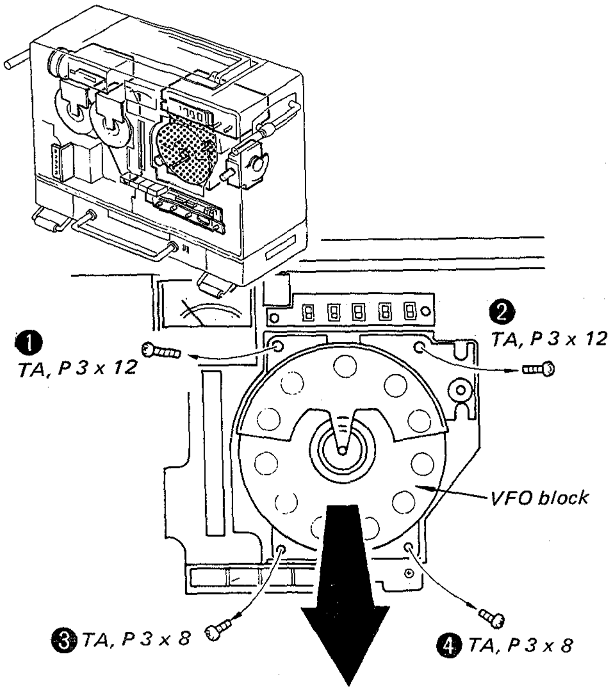



dot
MW/LW dial scale
yellow line
tuning shaft
❸ TA, P 3 x 8
❹ P 2.6 x 5
❷ MW/LW dial scale
❶ MW/LW dial pointer plate

Note: *After installing the MW/LW dial scale, be sure to coincide the yellow line with the dot by turning the MW/LW dial scale.*

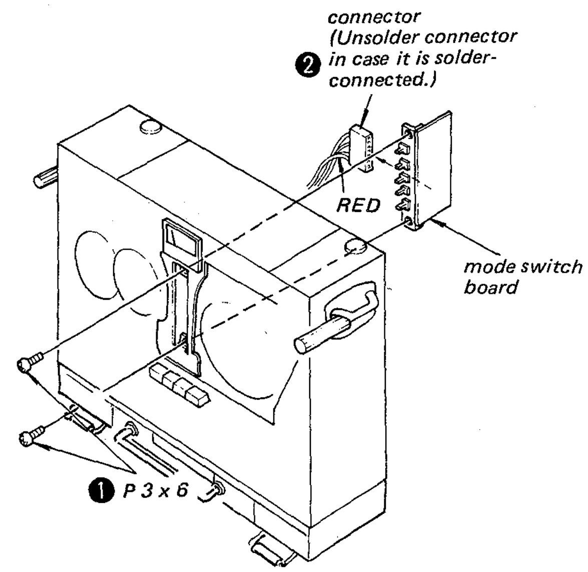
MW/LW Dial Cord Stringing
on page 31.

VFO Block Removal (2)

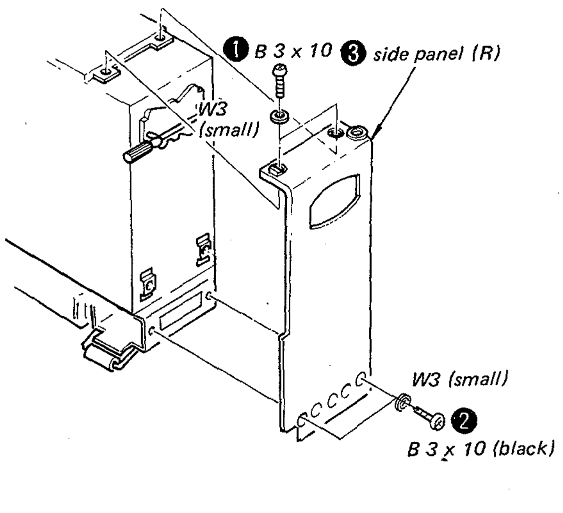

❶ TA, P 3 x 12
❷ TA, P 3 x 12
VFO block
❸ TA, P 3 x 8
❹ TA, P 3 x 8

SW Dial Scale Installation on page 29.

MODE Switch Board Removal

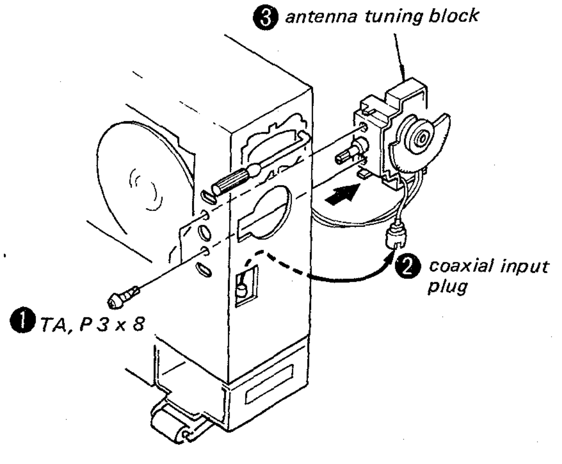

❷ connector (Unsolder connector in case it is solder-connected.)
RED
mode switch board
❶ P 3 x 6

Side Panel (R) Removal


❶ B 3 x 10
❸ side panel (R)
W3 (small)
W3 (small)
❷ B 3 x 10 (black)

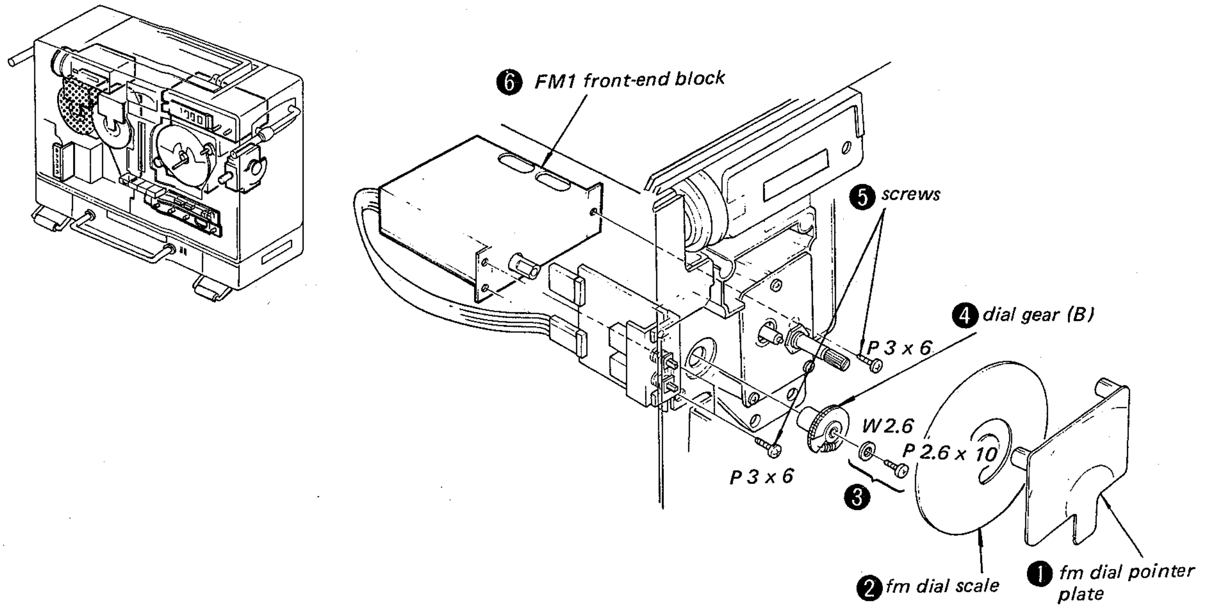
Main Chassis Overturning (1) on page 24.

Antenna Tuning Block Removal


❸ antenna tuning block
❷ coaxial input plug
❶ TA, P 3 x 8

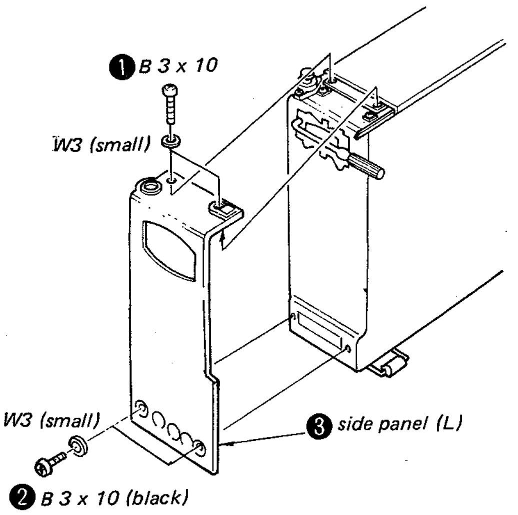
Antenna Tuning Block Dial Cord Stringing on page 30.

FM1 Front-end Block Removal


❻ FM1 front-end block
❺ screws
❹ dial gear (B)
P 3 x 6
W2.6
P 2.6 x 10
P 3 x 6
❸
❷ fm dial scale
❶ fm dial pointer plate

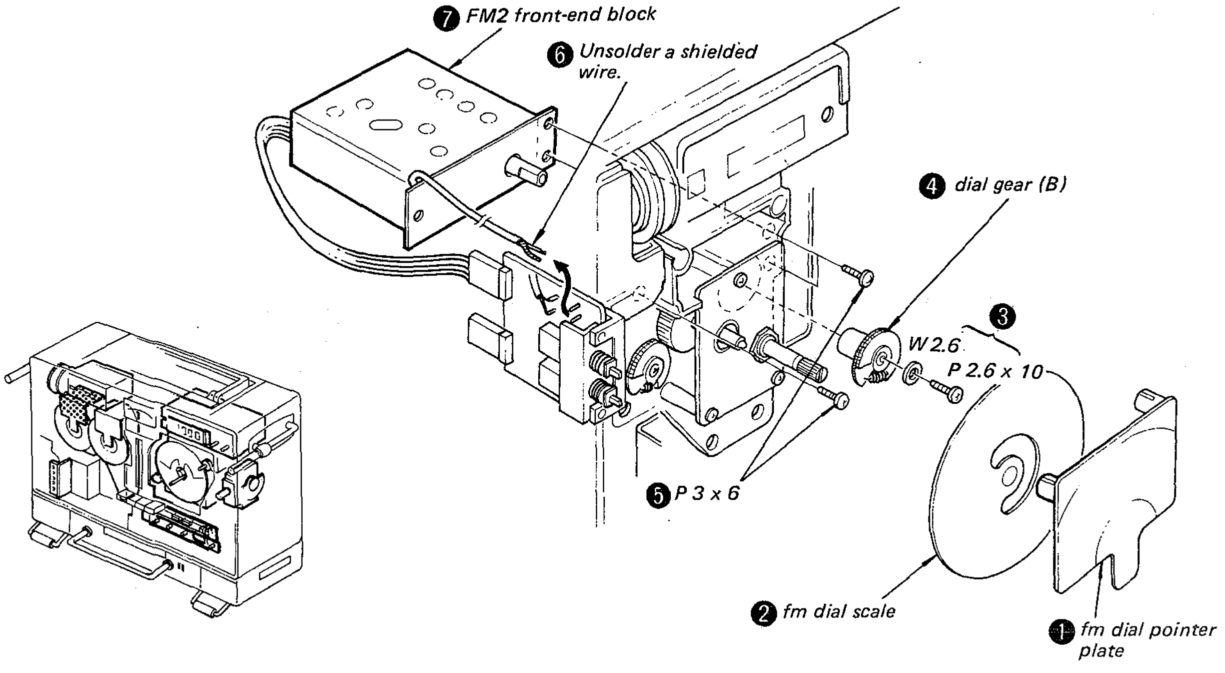
FM Telescopic Antenna Removal
on page 27.

Side Panel (L) Removal

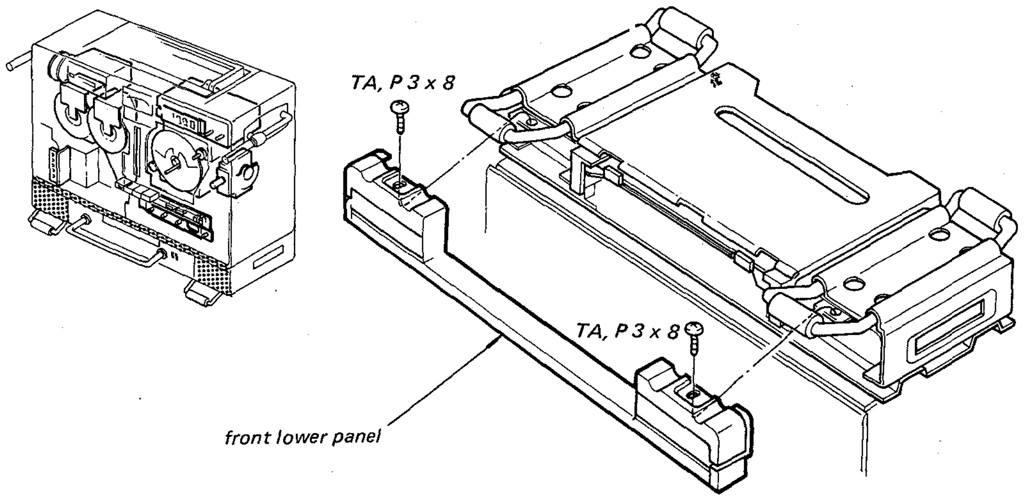

❶ B 3 x 10
W3 (small)
W3 (small)
❷ B 3 x 10 (black)
❸ side panel (L)

Side Panel (R) Removal
on page 17.

FM2 Front-end Block Removal


⑦ FM2 front-end block
⑥ Unsolder a shielded wire.
④ dial gear (B)
③
W2.6
P 2.6 x 10
⑤ P 3 x 6
② fm dial scale
① fm dial pointer plate

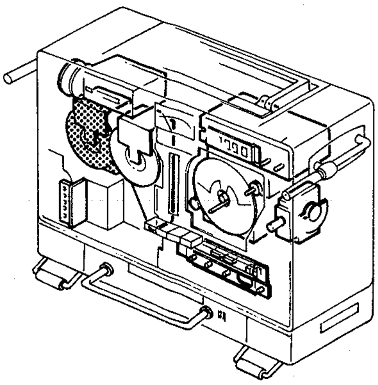
Front Lower Panel Removal

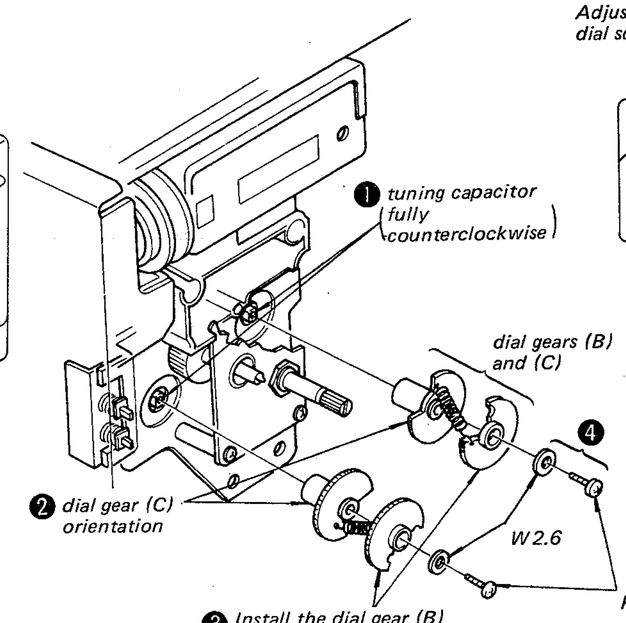

TA, P 3 x 8
TA, P 3 x 8
front lower panel

Main Chassis Overturning (1)
on page 24.

Counter Block Removal
on page 25.

FM Dial Gears (B) and (D) Installation





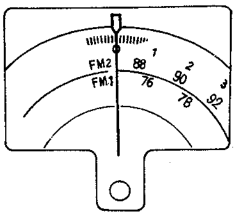
① tuning capacitor (fully counterclockwise)

② dial gear (C) orientation

③ Install the dial gear (B) to obtain a maximum spring tension.

④

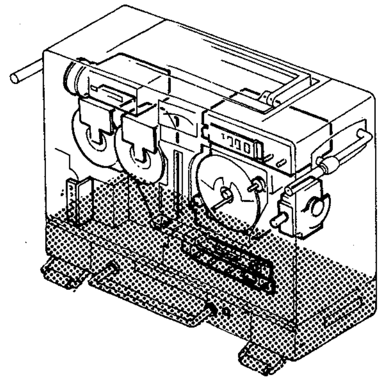
dial gears (B) and (C)
W2.6
P 2.6 x 10

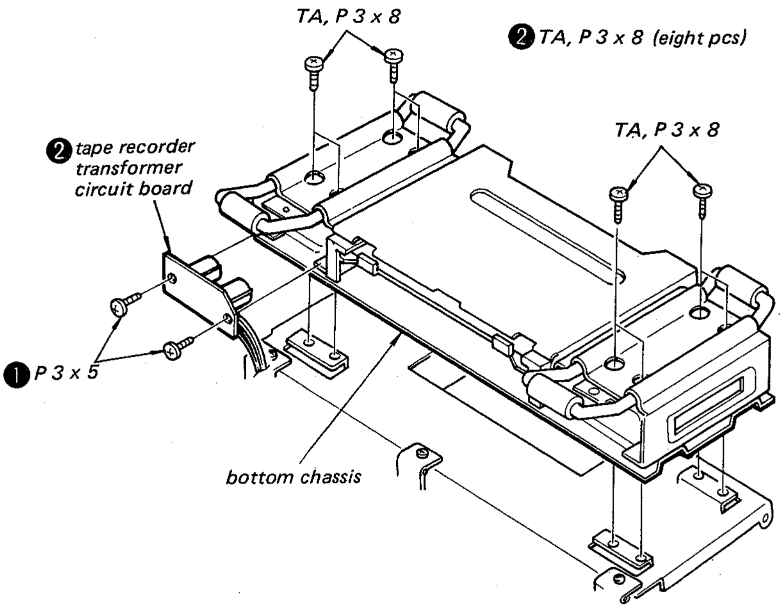


⑤ *Install the dial scale and dial pointer plate. Set the tuning shafts of the tuning capacitors to full counterclockwise position. Adjust the position of the dial scale as shown.*

FM2
FM1
88
90
92
76
78
1
2
3

Bottom Chassis Removal





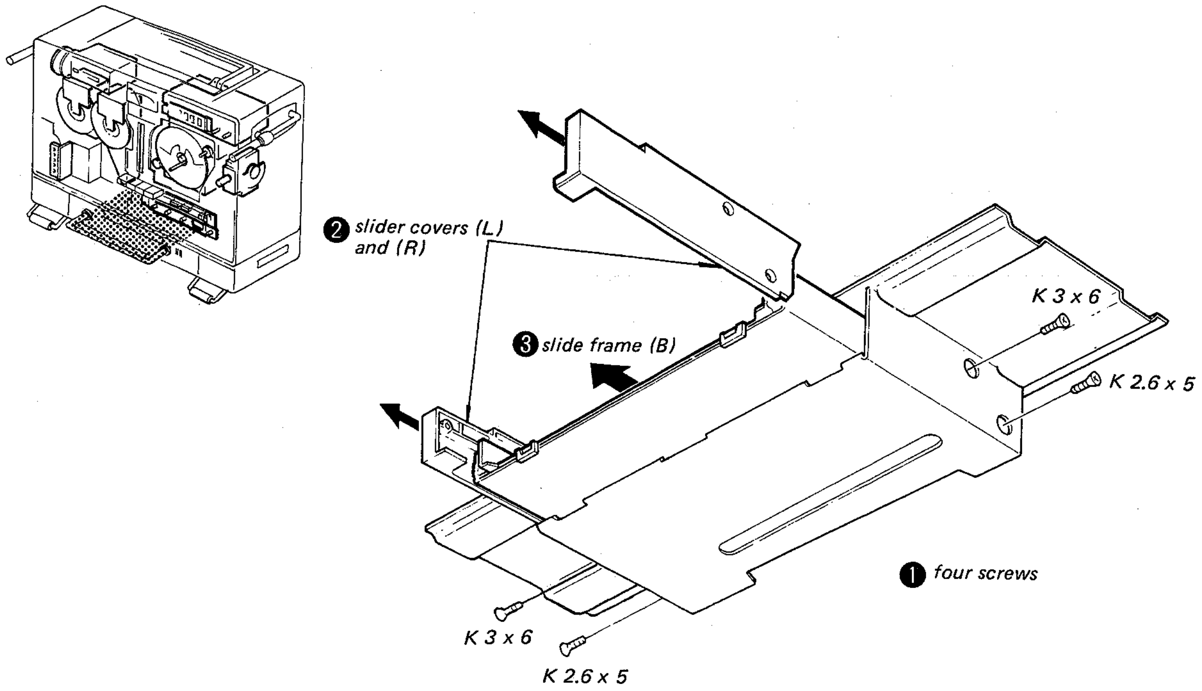
① P 3 x 5

② tape recorder transformer circuit board

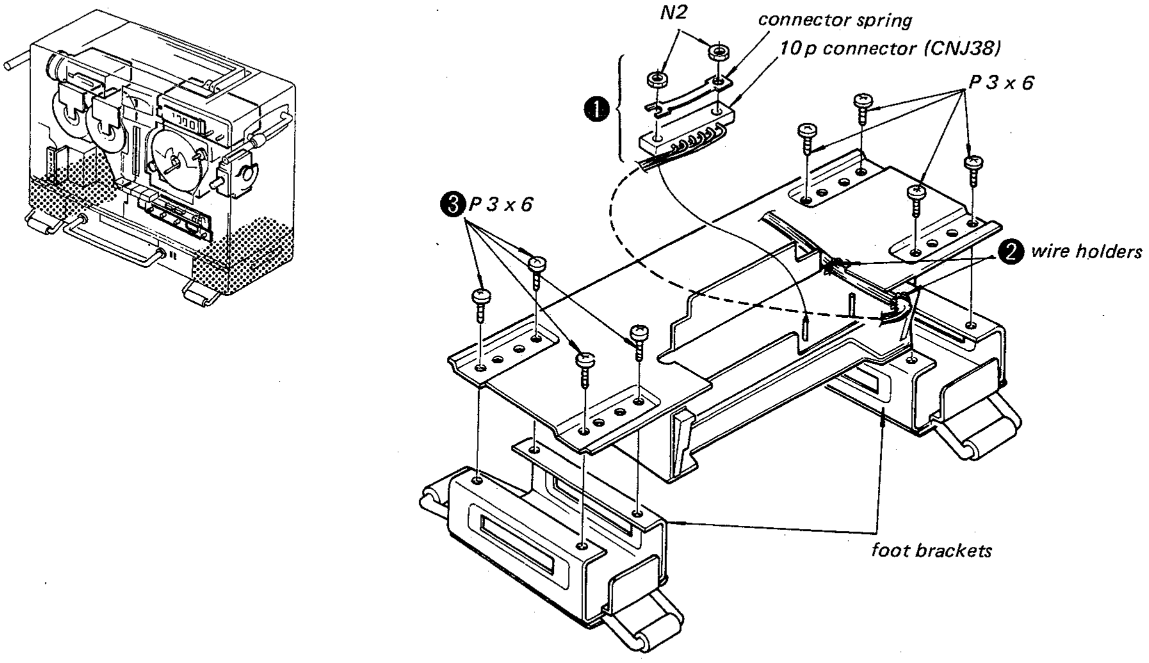
② TA, P 3 x 8 (eight pcs)

TA, P 3 x 8
TA, P 3 x 8
bottom chassis

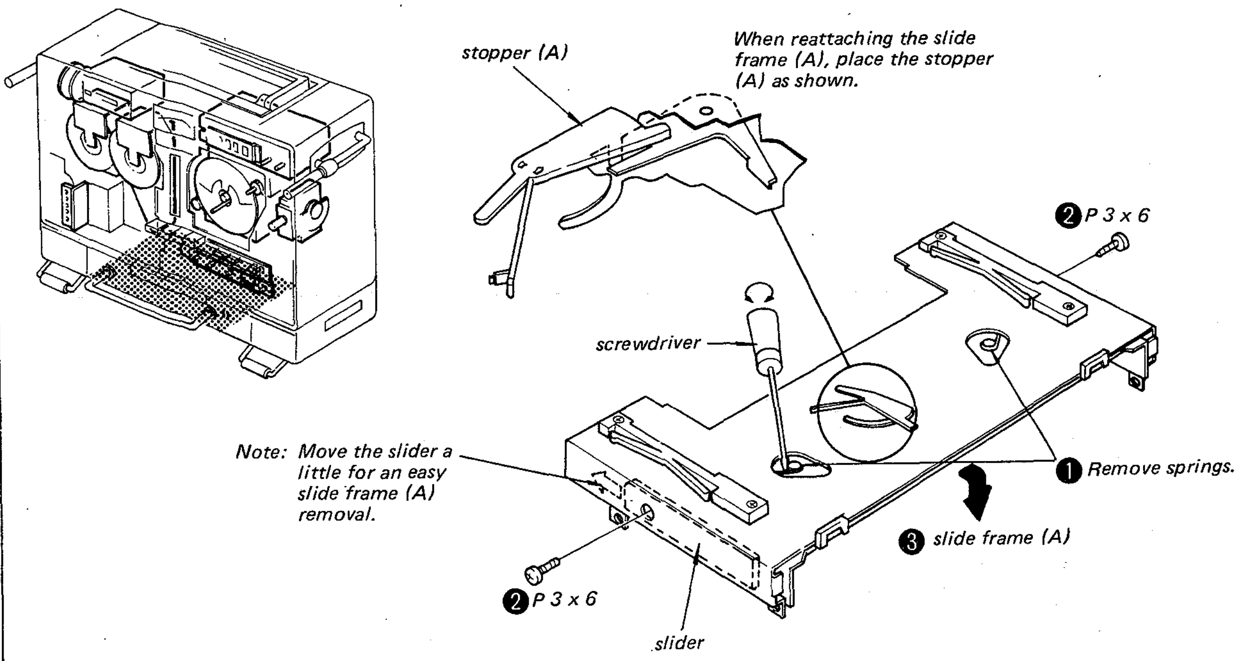
Slide Frame (B) Removal


❷ slider covers (L) and (R)
❸ slide frame (B)
K 3 x 6
K 2.6 x 5
❶ four screws
K 3 x 6
K 2.6 x 5

Foot Bracket Removal


N2
connector spring
10 p connector (CNJ38)
P 3 x 6
❶
❸ P 3 x 6
❷ wire holders
foot brackets

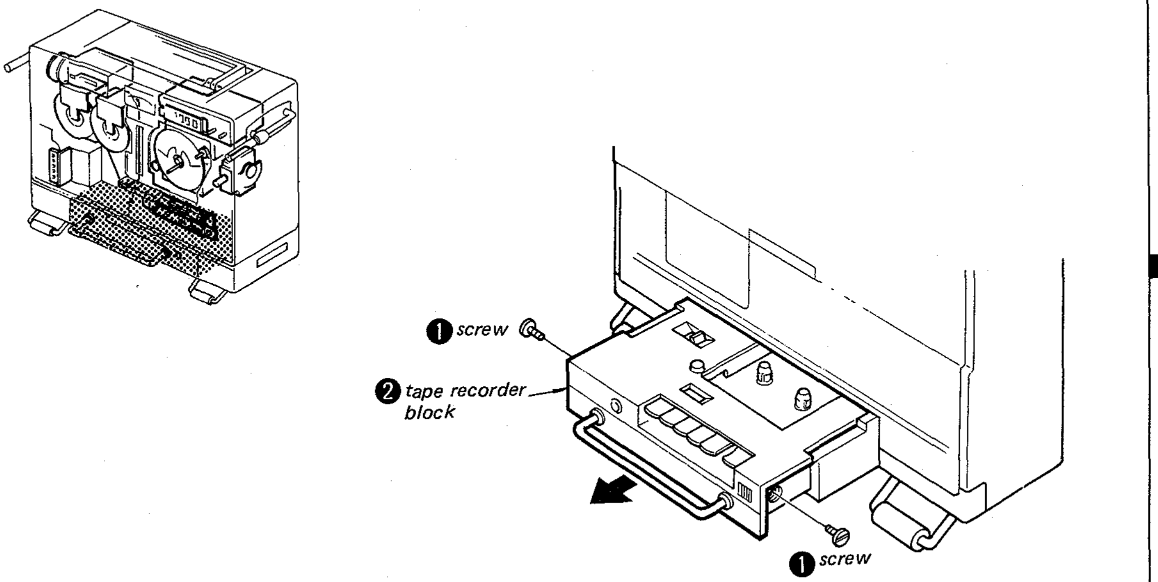
Slide Frame (A) Removal


stopper (A)
❷ P 3 x 6
screwdriver
❶ Remove springs.
❸ slide frame (A)
❷ P 3 x 6
slider

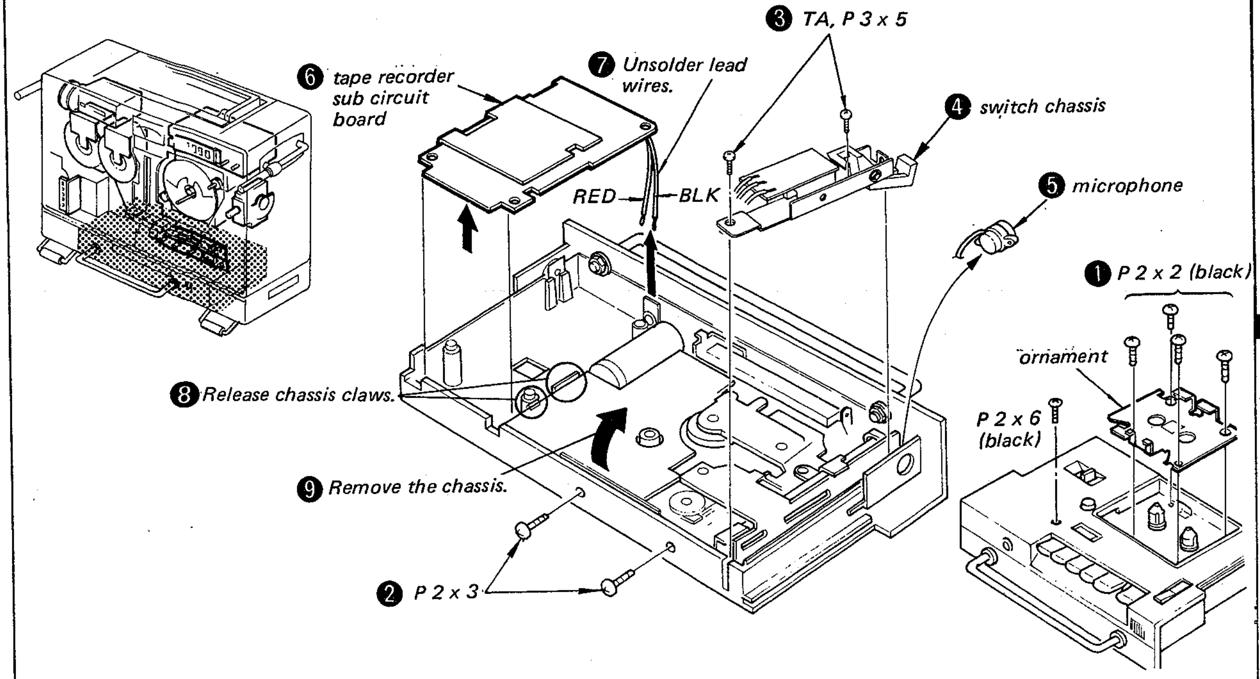
When reattaching the slide frame (A), place the stopper (A) as shown.

Note: Move the slider a little for an easy slide frame (A) removal.

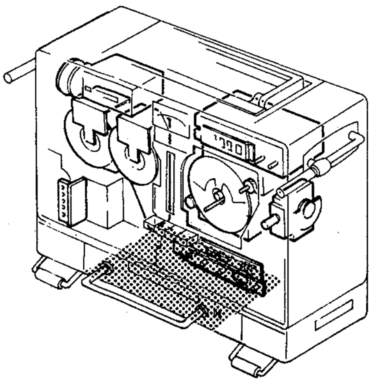
Tape Recorder Block Removal

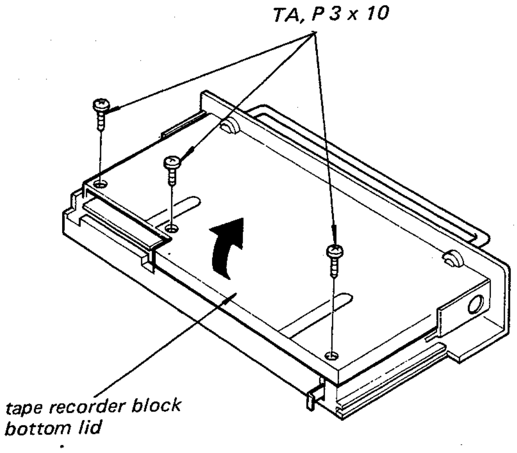

❶ screw
❷ tape recorder block
❶ screw

Tape Recorder Mechanism Removal

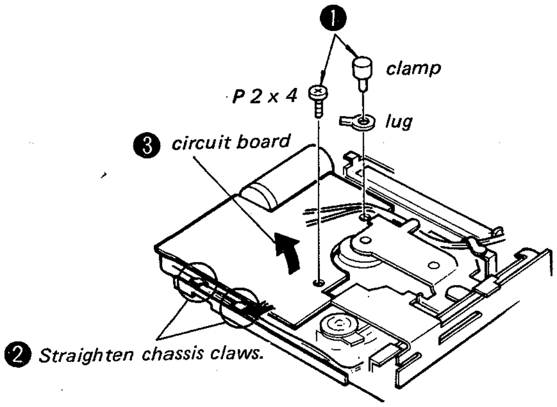

❸ TA, P 3 x 5
❻ tape recorder sub circuit board
❼ Unsolder lead wires.
❹ switch chassis
RED
BLK
❺ microphone
❶ P 2 x 2 (black)
ornament
P 2 x 6 (black)
❽ Release chassis claws.
❾ Remove the chassis.
❷ P 2 x 3

Tape Recorder Block Bottom Lid Removal



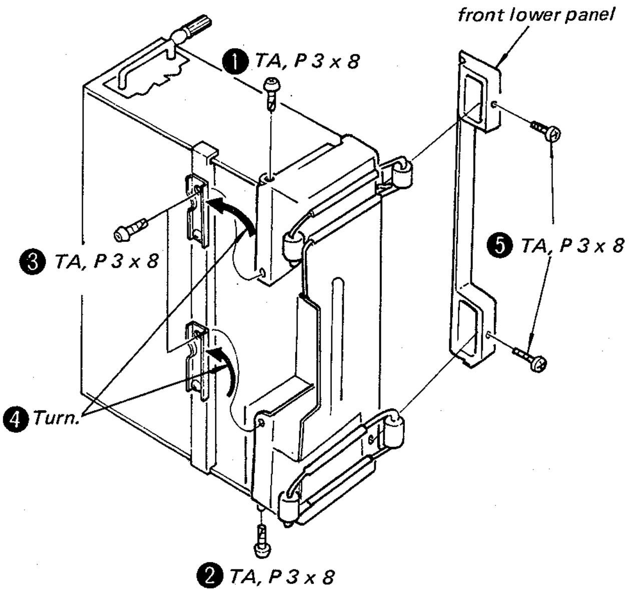

TA, P 3 x 10
tape recorder block bottom lid

Tape Recorder Main Board Removal

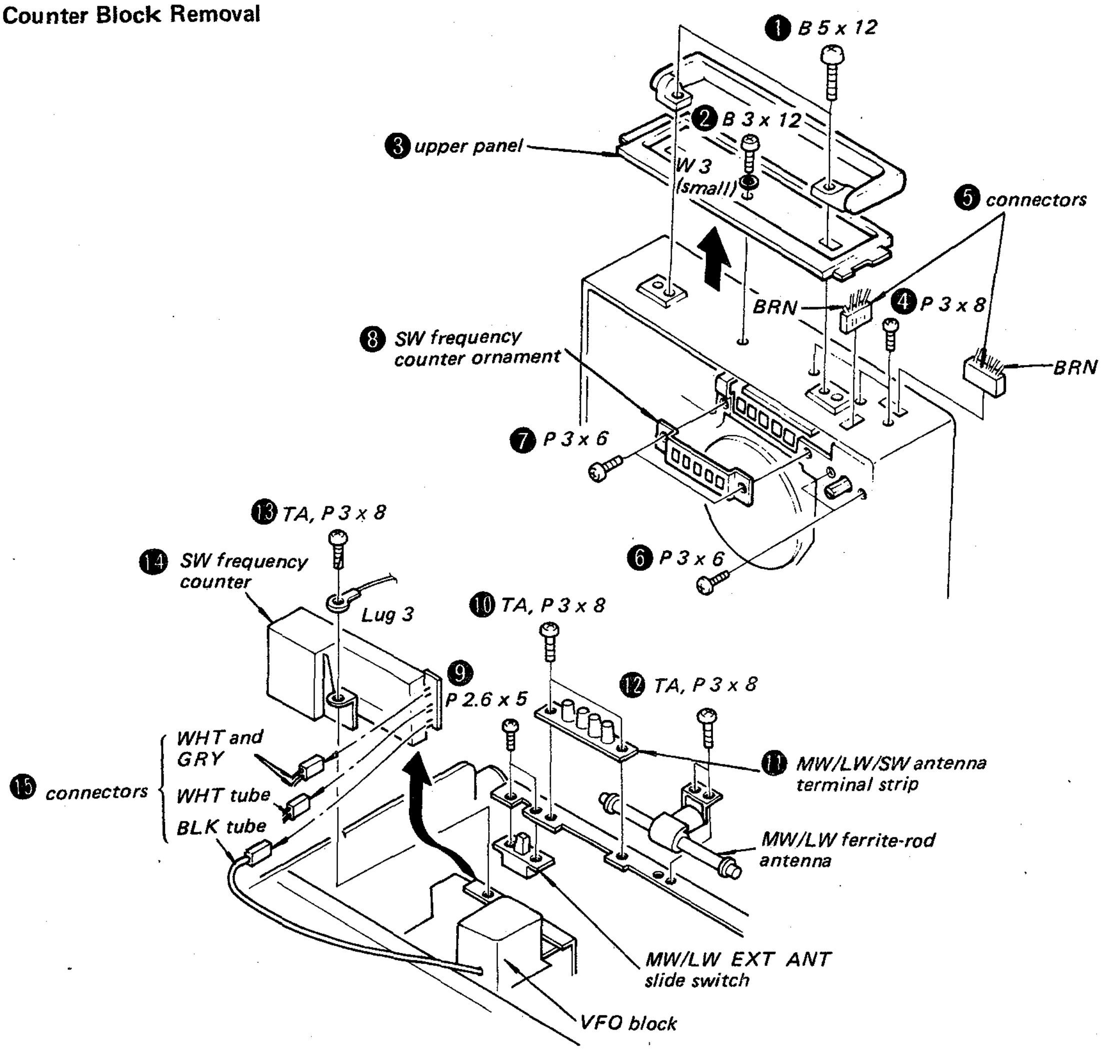

❶
clamp
P 2 x 4
lug
❸ circuit board
❷ Straighten chassis claws.

- **Rear Case Removal**
  on page 13.
- **Front Panel Removal**
  on page 13.
- **Side Panel (R) Removal**
  on page 17.
- **Side Panel (L) Removal**
  on page 18.

Main Chassis Overturning (1)

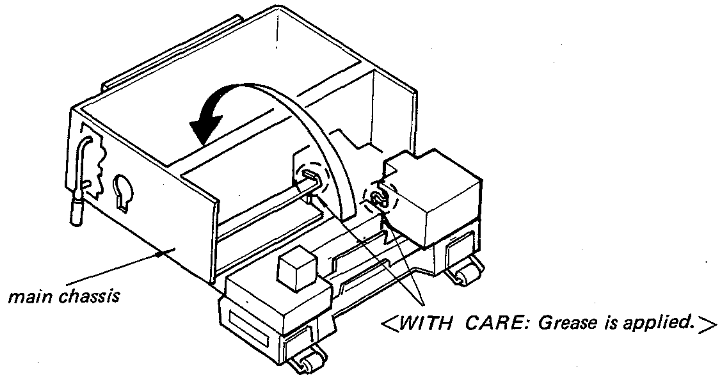

front lower panel
❶ TA, P 3 x 8
❸ TA, P 3 x 8
❺ TA, P 3 x 8
❹ Turn.
❷ TA, P 3 x 8

Counter Block Removal

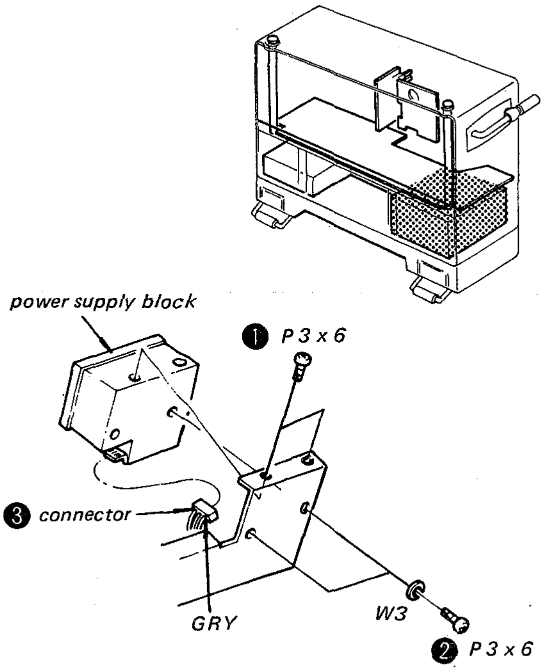

❶ B 5 x 12
❷ B 3 x 12
❸ upper panel
W 3 (small)
❺ connectors
BRN
❹ P 3 x 8
BRN
❽ SW frequency counter ornament
❼ P 3 x 6
⓭ TA, P 3 x 8
⓮ SW frequency counter
❻ P 3 x 6
Lug 3
❿ TA, P 3 x 8
❾ P 2.6 x 5
⓬ TA, P 3 x 8
WHT and GRY
⓯ connectors
WHT tube
BLK tube
⓫ MW/LW/SW antenna terminal strip
MW/LW ferrite-rod antenna
MW/LW EXT ANT slide switch
VFO block

Main Chassis Overturning (2)

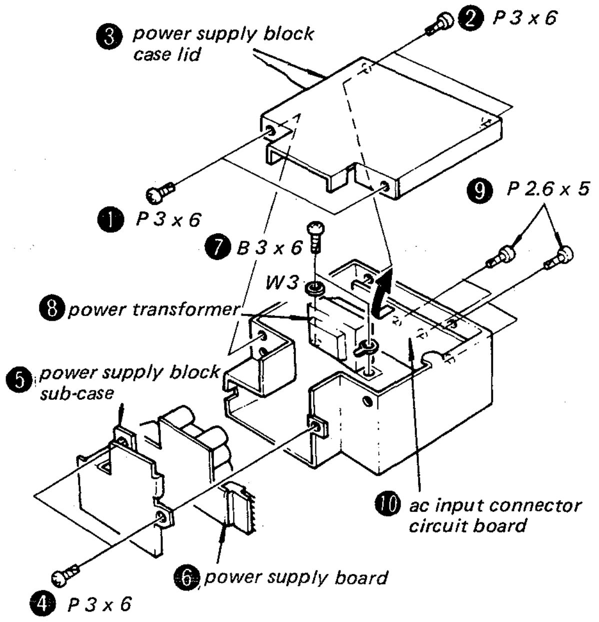
The set can be overturned as shown below.


main chassis
<WITH CARE: Grease is applied.>

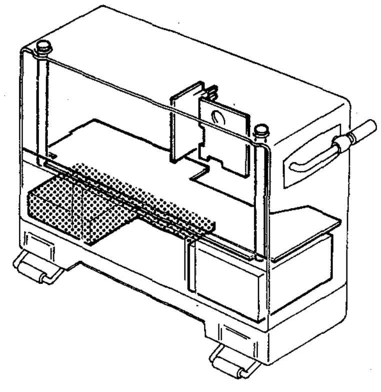
Power Supply Block Removal

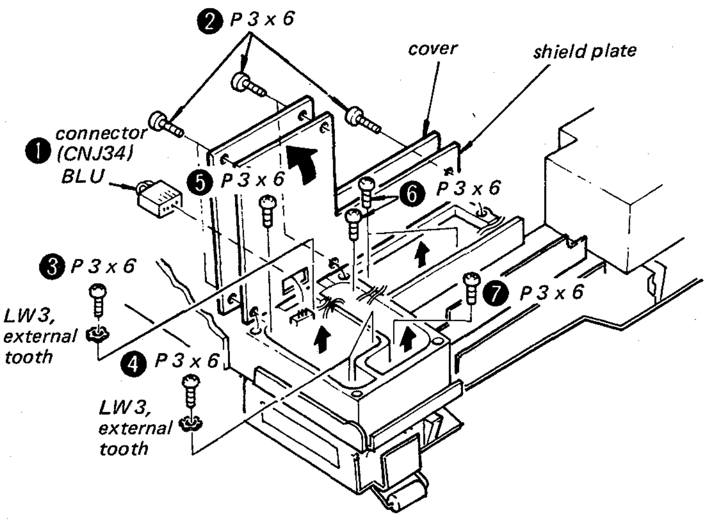

power supply block
❶ P3x6
❸ connector
GRY
W3
❷ P3x6

AC Input Connector Board and Power Supply Board Removal

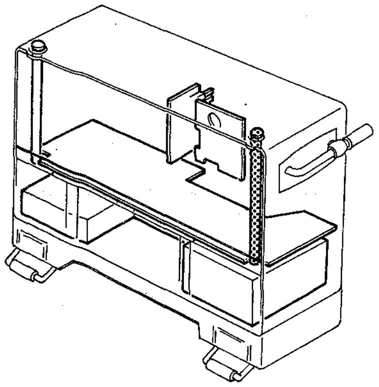

❸ power supply block case lid
❷ P3x6
❶ P3x6
❾ P2.6x5
❼ B3x6
W3
❽ power transformer
❺ power supply block sub-case
❿ ac input connector circuit board
❻ power supply board
❹ P3x6

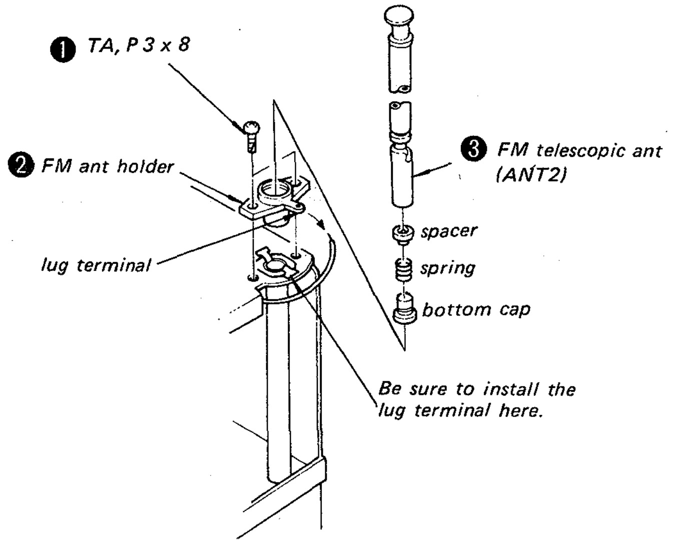
Synthesizer Block Removal




❷ P3x6
cover
shield plate
❶ connector (CNJ34) BLU
❺ P3x6
❻ P3x6
❸ P3x6
LW3, external tooth
❼ P3x6
❹ P3x6
LW3, external tooth

FM Telescopic Antenna Removal

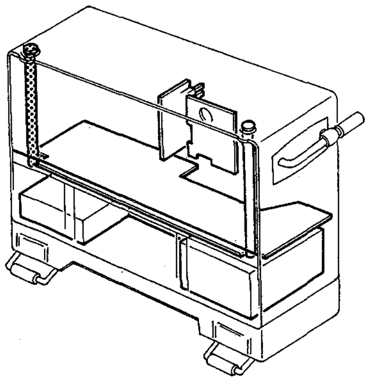


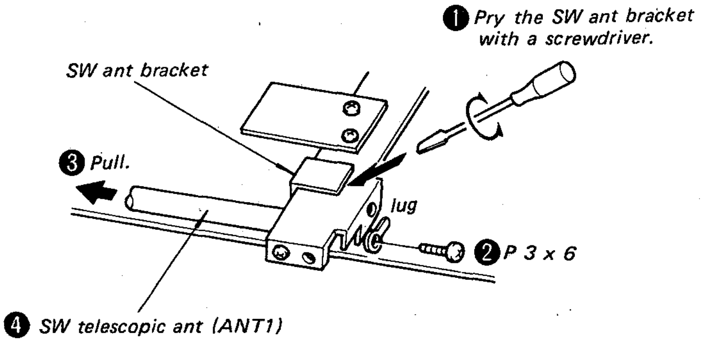

❶ TA, P 3 x 8
❷ FM ant holder
lug terminal
❸ FM telescopic ant (ANT2)
spacer
spring
bottom cap

Be sure to install the lug terminal here.

Side Panel (L) Removal
on page 18.

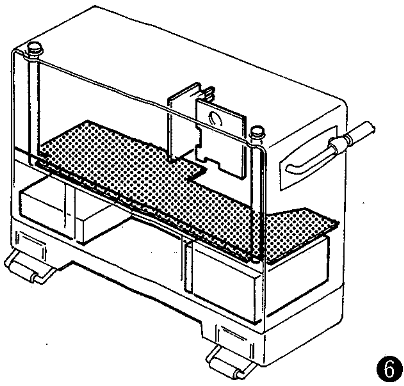
SW Telescopic Antenna Removal

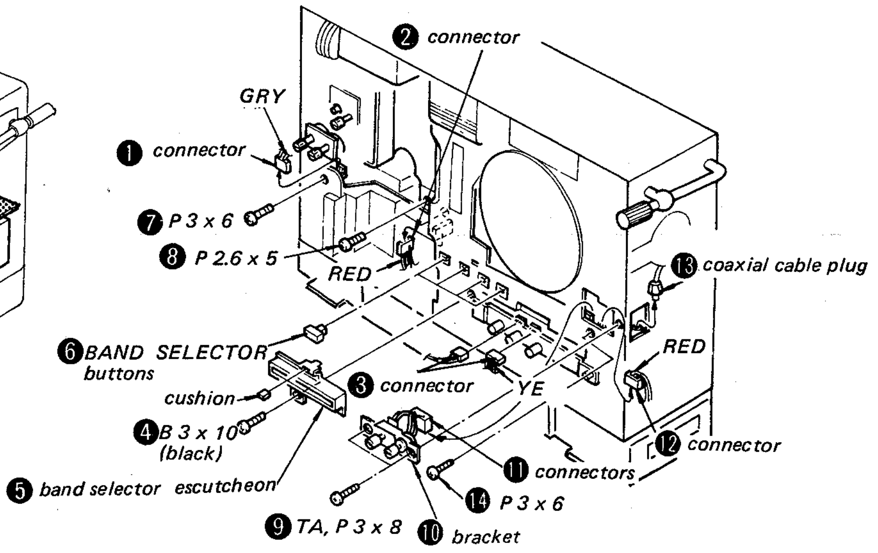



SW ant bracket
❸ Pull.
lug
❷ P 3 x 6
❹ SW telescopic ant (ANT1)

❶ Pry the SW ant bracket with a screwdriver.

Main Board Removal (1)

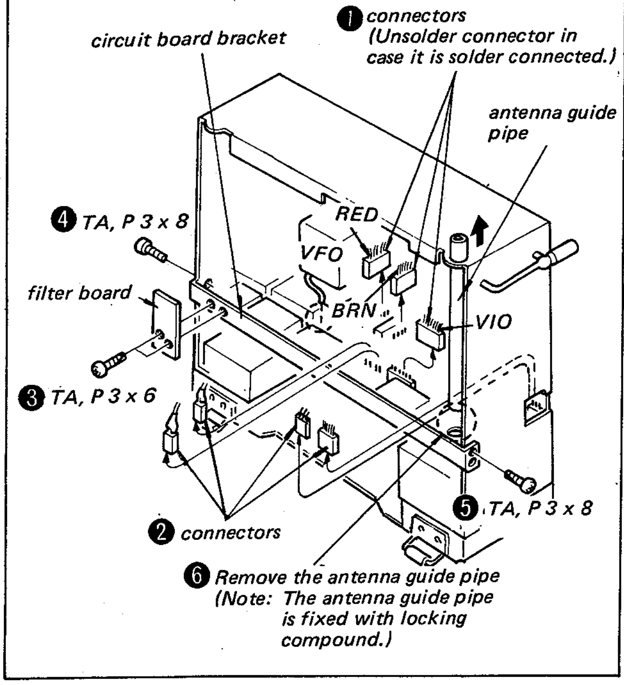



② connector
GRY
① connector
⑦ P 3 x 6
⑧ P 2.6 x 5
RED
⑬ coaxial cable plug
RED
⑥ BAND SELECTOR buttons
③ connector
YE
cushion
④ B 3 x 10 (black)
⑫ connector
⑪ connectors
⑤ band selector escutcheon
⑭ P 3 x 6
⑨ TA, P 3 x 8
⑩ bracket

MW/LW Dial Block Removal

on page 16.

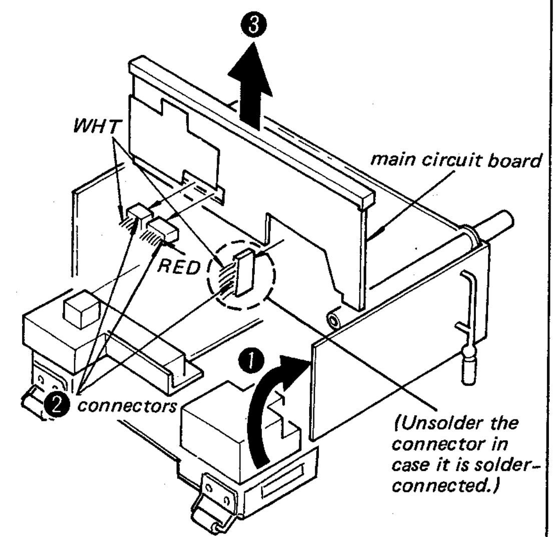
Main Board Removal (2)


circuit board bracket
① connectors
antenna guide pipe
④ TA, P 3 x 8
RED
VFO
filter board
BRN
VIO
③ TA, P 3 x 6
⑤ TA, P 3 x 8
② connectors

(Unsolder connector in case it is solder connected.)

⑥ Remove the antenna guide pipe (Note: The antenna guide pipe is fixed with locking compound.)

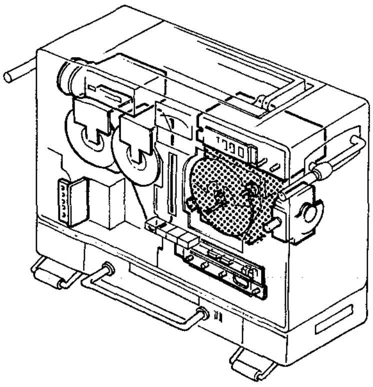
Main Board Removal (3)

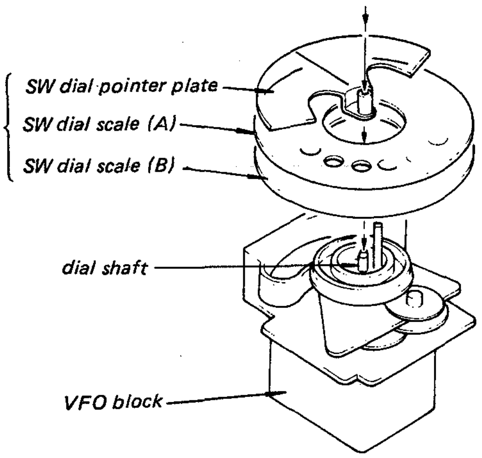

③
WHT
main circuit board
RED
①
② connectors

(Unsolder the connector in case it is solder-connected.)

VFO Block Removal (2)
on page 17.

SW Dial Scale Installation



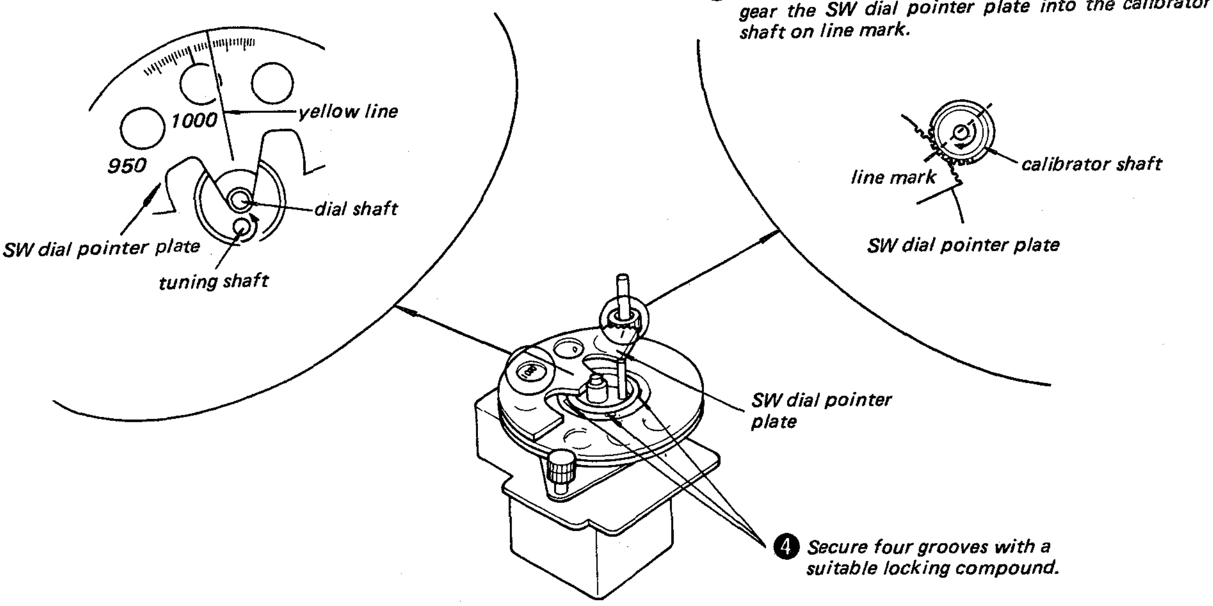


❶ *Install them slightly to the dial shaft.*

SW dial pointer plate
SW dial scale (A)
SW dial scale (B)
dial shaft
VFO block

❸ *Turn the tuning shaft fully counterclockwise. Install the two kinds of dial scale and dial pointer plate so that the yellow line on the dial pointer plate points to "1010".*

❷ *After turning the calibrator shaft fully clockwise, gear the SW dial pointer plate into the calibrator shaft on line mark.*

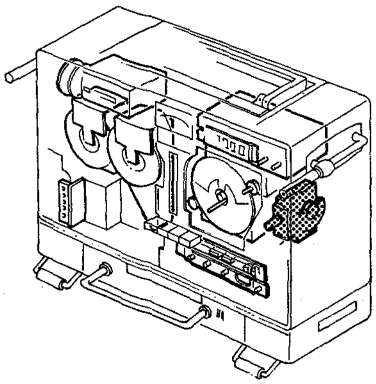


1000
yellow line
950
dial shaft
SW dial pointer plate
tuning shaft
line mark
calibrator shaft
SW dial pointer plate
SW dial pointer plate

❹ *Secure four grooves with a suitable locking compound.*

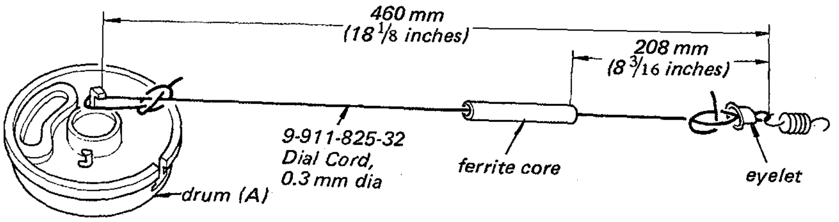
Antenna Tuning Block Removal
on page 17.

Antenna Tuning Block Dial Cord Stringing

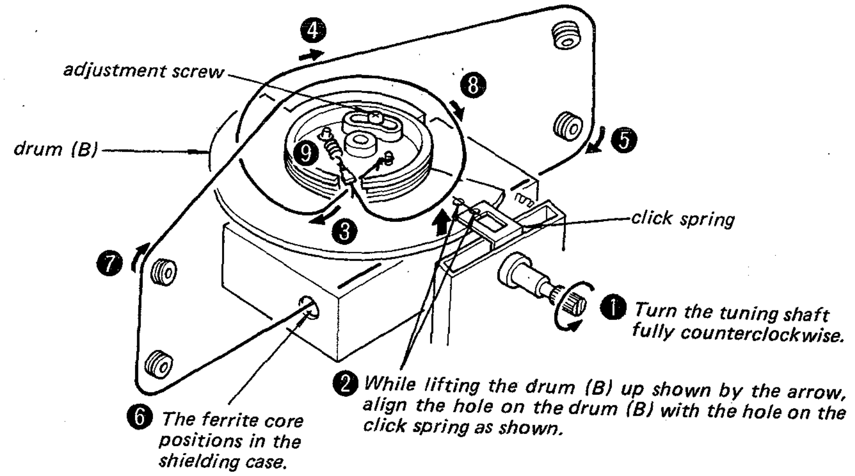


1. Dial Cord Preparation

- *Crimp the eyelet.*
- *Secure the ties, eyelet and ferrite core with a suitable locking compound.*


460 mm
(18 1/8 inches)
208 mm
(8 3/16 inches)
9-911-825-32
Dial Cord,
0.3 mm dia
ferrite core
eyelet
drum (A)

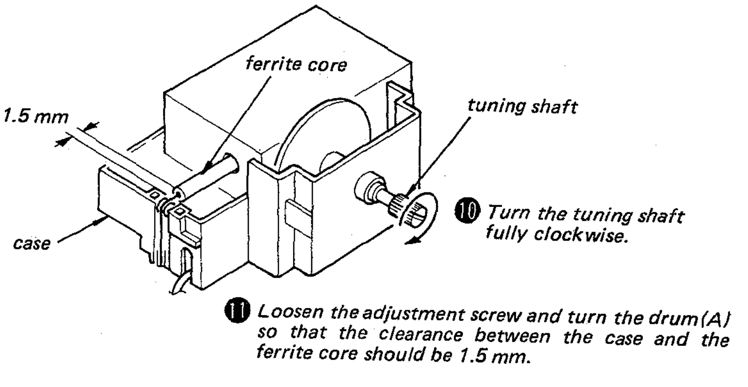
2. Dial Cord Stringing


❹
adjustment screw
❽
drum (B)
❺
❾
❸
click spring
❼

❶ *Turn the tuning shaft fully counterclockwise.*

❷ *While lifting the drum (B) up shown by the arrow, align the hole on the drum (B) with the hole on the click spring as shown.*

❻ *The ferrite core positions in the shielding case.*


ferrite core
tuning shaft
1.5 mm
case

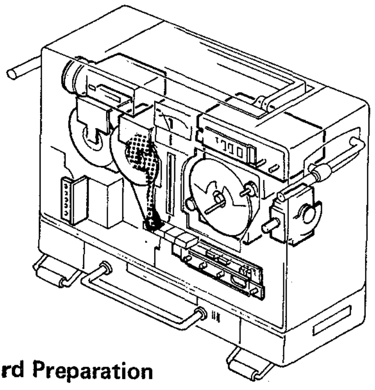
❿ *Turn the tuning shaft fully clockwise.*

⓫ *Loosen the adjustment screw and turn the drum (A) so that the clearance between the case and the ferrite core should be 1.5 mm.*

MW/LW Dial Block Removal

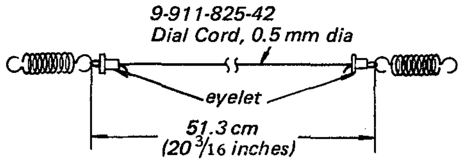
on page 16.

MW/LW Dial Cord Stringing

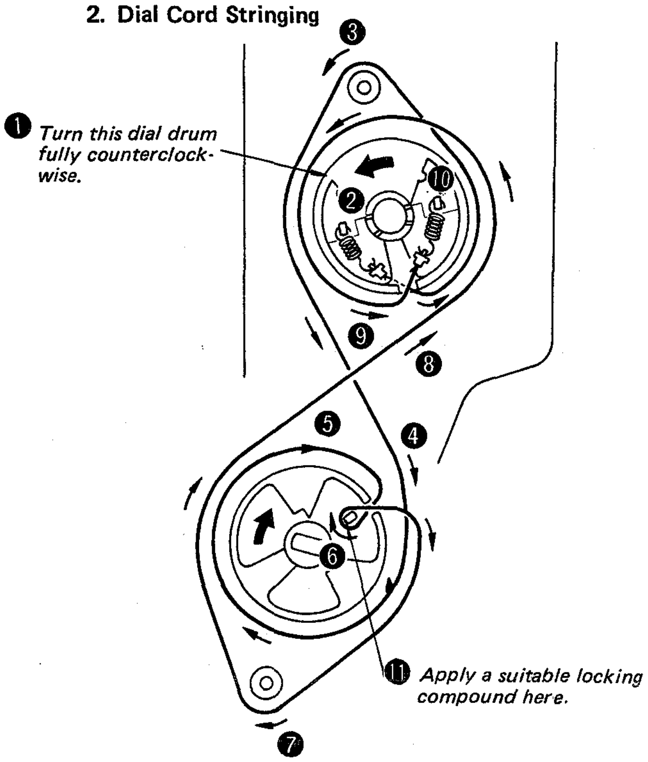


1. Dial Cord Preparation

- ○ *Crimp the eyelets.*
- ○ *Secure the dial cord and eyelets with a suitable locking compound.*


9-911-825-42
Dial Cord, 0.5 mm dia
eyelet
51.3 cm
(20 3/16 inches)

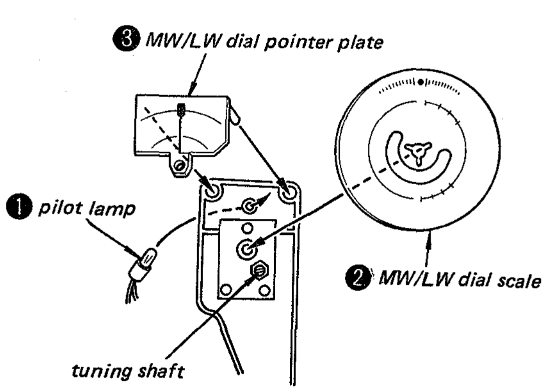
2. Dial Cord Stringing


③
②
⑩
⑨
⑧
⑤
④
⑥
⑪
⑦

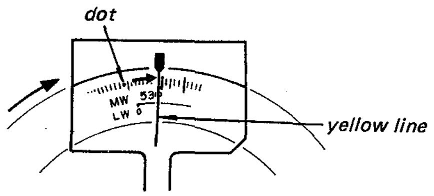
❶ *Turn this dial drum fully counterclockwise.*

⑪ *Apply a suitable locking compound here.*

MW/LW Dial Block Installation


③ MW/LW dial pointer plate
① pilot lamp
② MW/LW dial scale
tuning shaft

④ *Turn the tuning shaft fully clockwise and then coincide the yellow line with the dot by turning the MW/LW dial scale.*

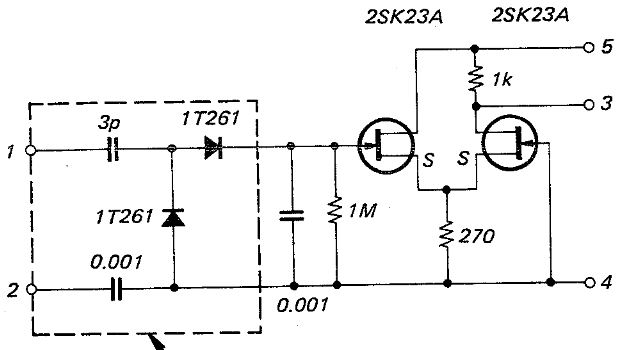

dot
yellow line
MW
LW

SECTION 3
ADJUSTMENTS

3-1. RADIO SECTION

Test Equipment Required:

- FM rf signal generator
- AM rf signal generator
- FM sweep generator
- AM sweep generator
- marker generator
- frequency counter (100 MHz, resolution ± 1 Hz)
- ac/dc VTVM
- rf VTVM
- oscilloscope
- detector (shown below)



Wire this section shortest possible and connect capacitor leads directly to the test points shown in setup diagrams.

- **Note:** 1. Adjustments to the VFO can not be made by using generally available test equipment. When trouble is encountered to the VFO, replace the VFO Block. Part No.: **A-3624-020-B**

  2. Overturn the main chassis before the adjustments. Refer to pages 24 and 25.

3-1. +5 V VOLTAGE ADJUSTMENT

Setting:

BAND SELECTOR switch: SW

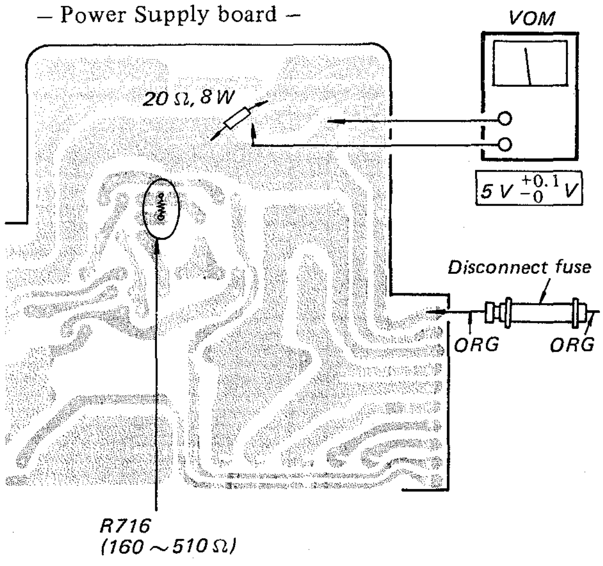
Procedure:

1. Disconnect the fuse F2.
2. Install a 20 Ω, 8 W resistor on the conductor side as shown.
3. Adjust the value of R716 to obtain the specified voltage. Perform this adjustment on the conductor side.

Note: When the patterns are heated by a soldering iron, thermistor warms up. Cool off the components and circuit board at a time in selecting resistor.

4. Install the selected resistor on the component side.
5. Remove 20 Ω, 8 W resistor and reconnect the fuse.

– Power Supply board –


VOM
20 Ω, 8 W
5 V $^{+0.1}_{-0}$ V
Disconnect fuse
ORG
ORG
R716
(160 ~ 510 Ω)

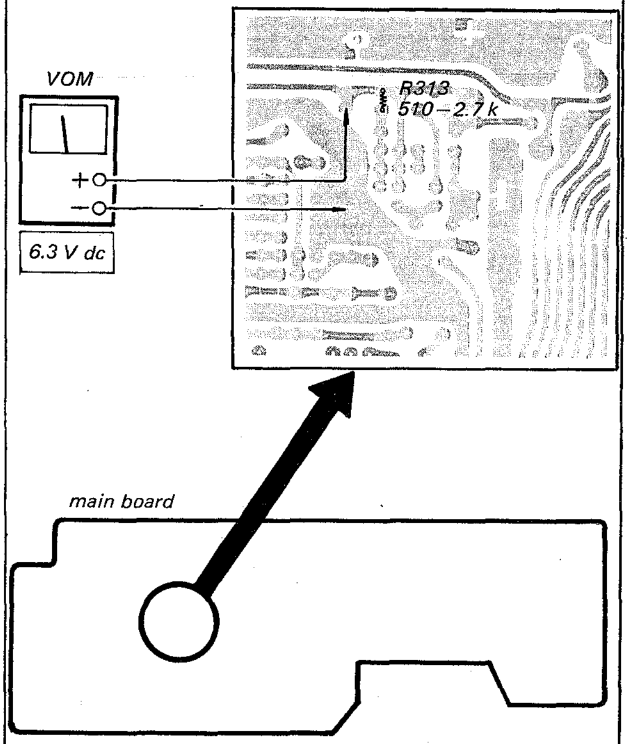
3-2. VCO POWER SUPPLY VOLTAGE ADJUSTMENT

Setting:

BAND SELECTOR switch: SW

Procedure:

Adjust the value of R313 (510 Ω – 2.7 kΩ) for the indicated VOM reading.

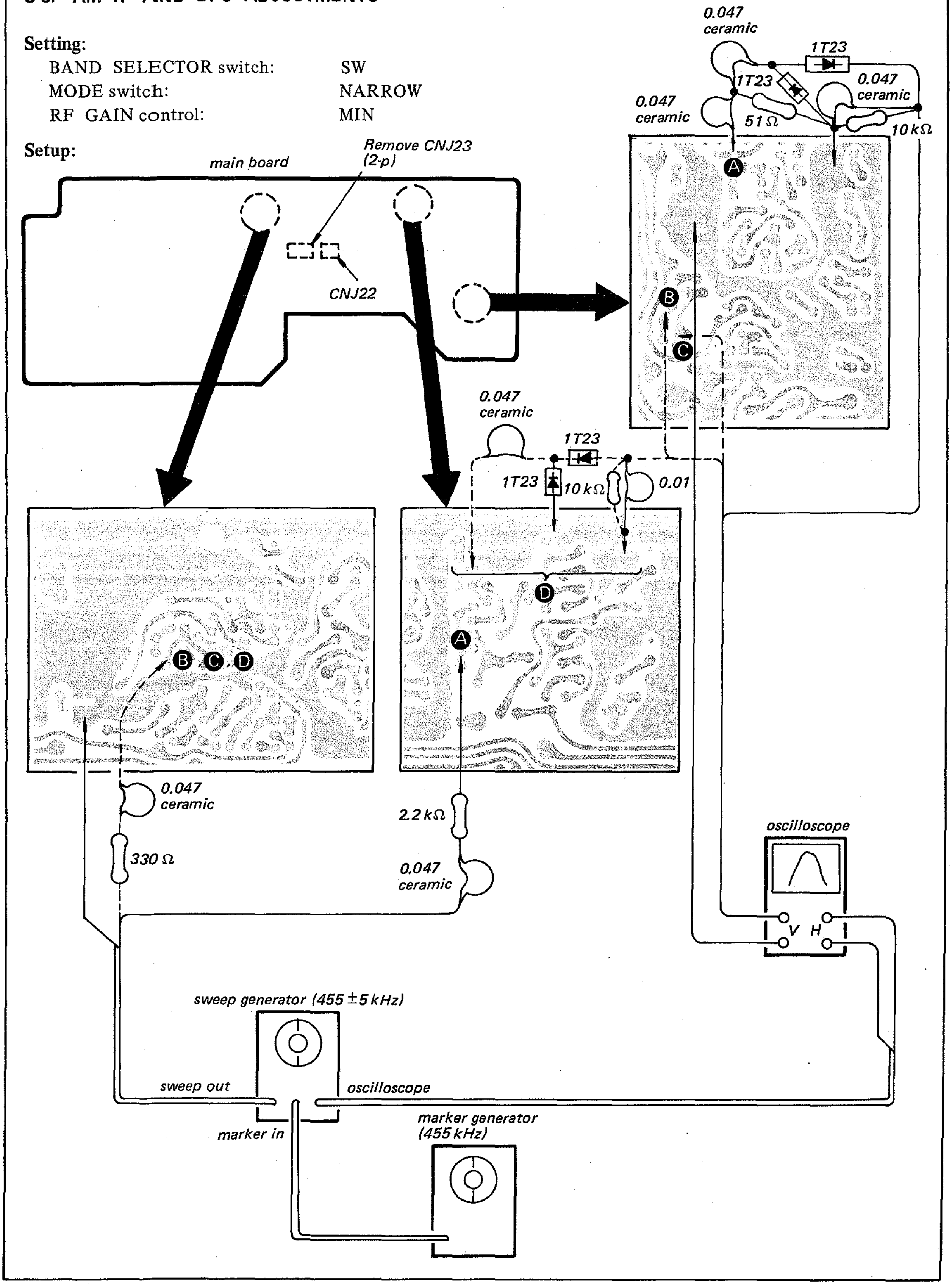

VOM
R313
510 – 2.7 k
+
–
6.3 V dc
main board

3-3. AM IF AND BFO ADJUSTMENTS

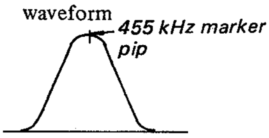
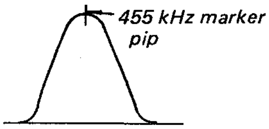
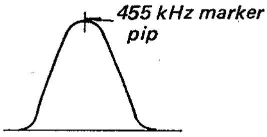
Setting:

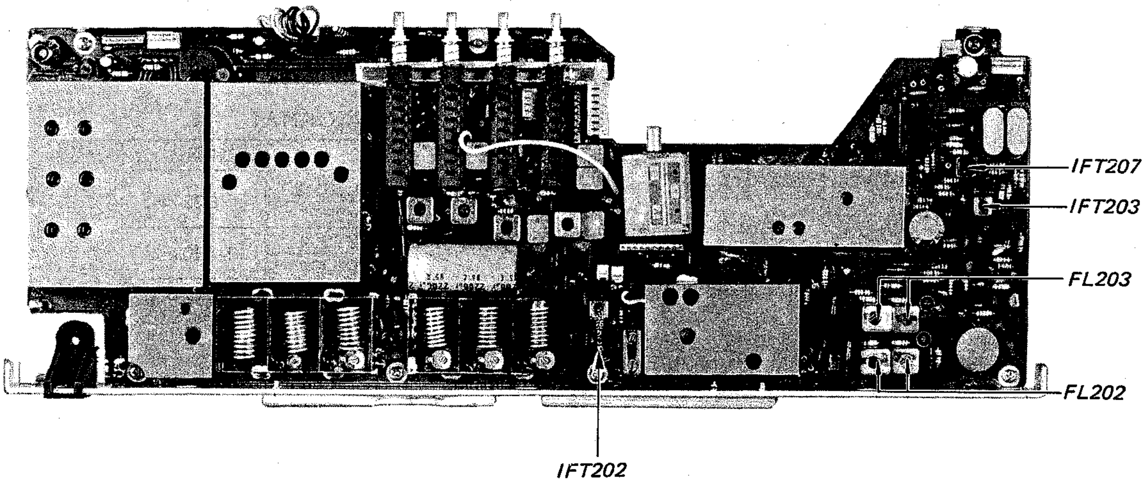
BAND SELECTOR switch: SW
MODE switch: NARROW
RF GAIN control: MIN

Setup:


0.047
ceramic
1T23
1T23
0.047
ceramic
0.047
ceramic
51 Ω
10 kΩ
main board
Remove CNJ23
(2-p)
A
CNJ22
B
C
0.047
ceramic
1T23
1T23
10 kΩ
0.01
D
A
B
C
D
0.047
ceramic
330 Ω
2.2 kΩ
0.047
ceramic
oscilloscope
V
H
sweep generator (455 ±5 kHz)
sweep out
oscilloscope
marker in
marker generator
(455 kHz)

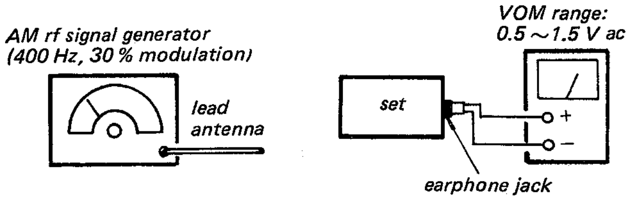
Procedure:

Adjust	Obtain
FL203 (Connect oscilloscope and sweep out to Ⓐ.) (MODE switch: NORMAL) FL202 (MODE switch: NARROW)	Highest and widest waveform  455 kHz marker pip
IFT202, IFT203 (Connect oscilloscope and sweep out to Ⓑ.) (MODE switch: NORMAL)	Highest waveform  455 kHz marker pip
IFT207 (MODE switch: LSB Connect oscilloscope to Ⓒ.) Check: MODE switch: USB	A beat spike on the above waveform. Set the core at the center of rotation in which a spike appears on the waveform. Beat spike should move to the opposite slope and stays stably.
IFT202 (Connect oscilloscope and sweep out to Ⓓ.) (MODE switch: NARROW)	Highest waveform  455 kHz marker pip


IFT207
IFT203
FL203
FL202
IFT202

3-4. LW/MW FREQUENCY COVERAGE AND TRACKING ADJUSTMENTS

Setup:

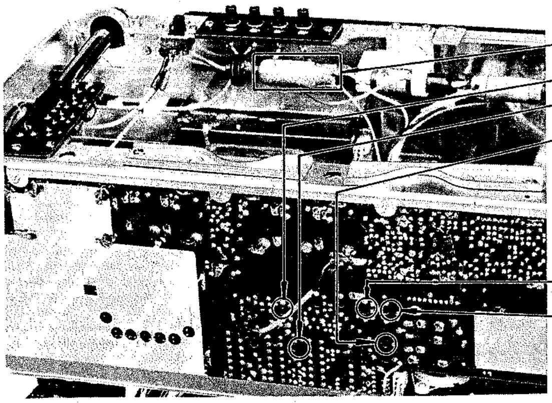

AM rf signal generator
(400 Hz, 30 % modulation)
lead
antenna
set
VOM range:
0.5 ~ 1.5 V ac
+
−
earphone jack

Adjust for maximum VOM reading.

A) LW

Setting:

BAND SELECTOR switch:	LW
MODE switch:	NORMAL
VOLUME control:	MAX
TONE controls:	MAX
RF GAIN control:	MAX/NORMAL



LW TRACKING	
L261-1	200 kHz
L263	
CT203	380 kHz
CT202	

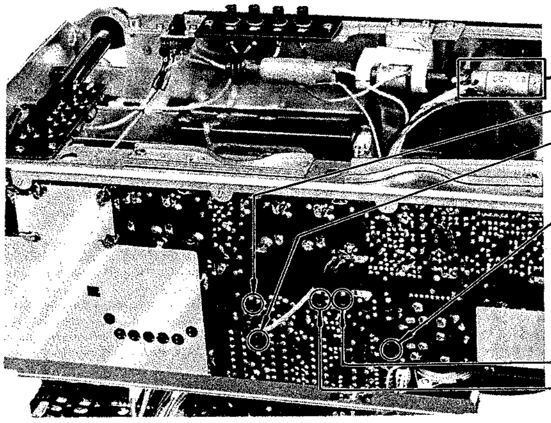
Fix L261-1 with wax after the adjustment.

LW FREQUENCY COVERAGE
L265 (146 kHz)
CT205 (407 kHz)

B) MW

Setting:

BAND SELECT switch:	MW
MODE switch:	NORMAL
VOLUME control:	MAX
TONE controls:	MAX
RF GAIN control:	MAX/NORMAL

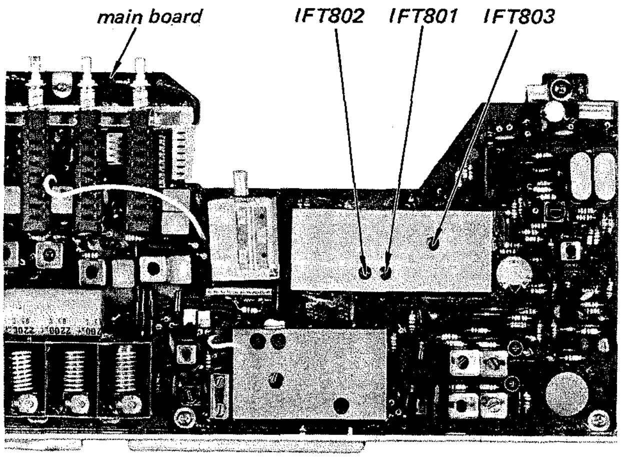


MW TRACKING	
L261-2	620 kHz
L262	
CT204	1,400 kHz
CT201	

Fix L261-2 with wax after the adjustment.

MW FREQUENCY COVERAGE
L264 (520 kHz)
CT206 (1,680 kHz)

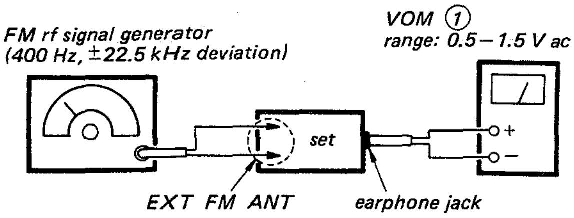
3-5. FM IF ALIGNMENT


main board
IFT802
IFT801
IFT803

Setting:

BAND SELECTOR switch: FM
VOLUME control: MAX
TONE controls: MAX
MUTING switch: OFF
AFC switch: OFF

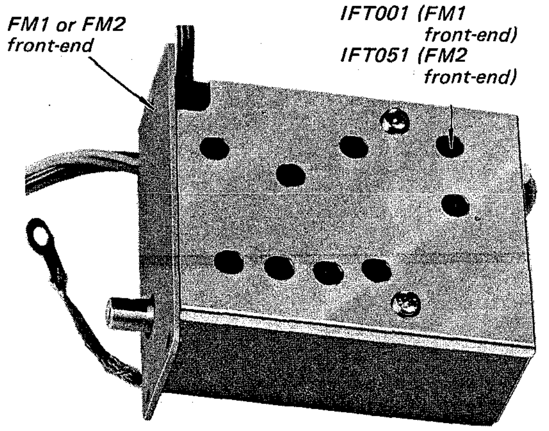
Setup:

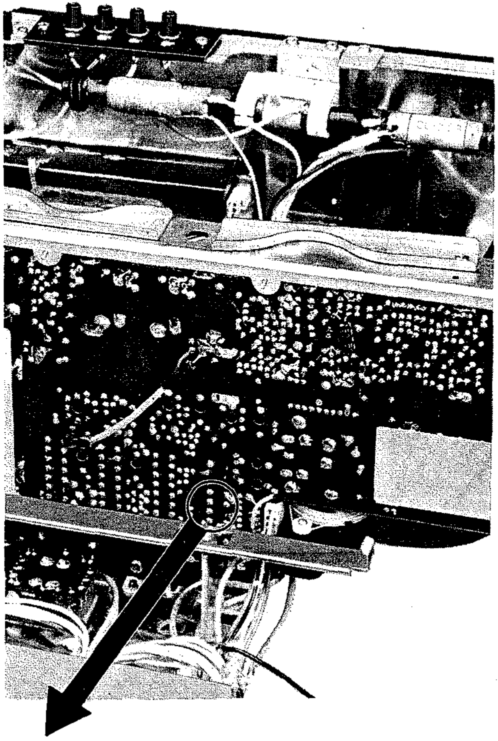

FM rf signal generator
(400 Hz, ±22.5 kHz deviation)
VOM ①
range: 0.5 – 1.5 V ac
set
+
–
EXT FM ANT
earphone jack

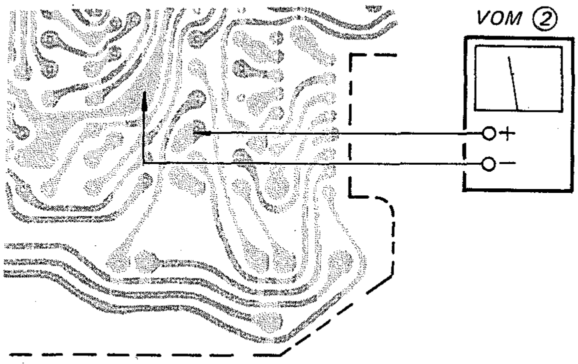
Procedure:

Remove the FM front-ends (Refer to pages 18 and 19.).

Signal Generator Frequency	Adjust	Obtain
10.7 MHz	IFT001 IFT051 IFT801 IFT802	Maximum VOM ① reading.
10.7 MHz	IFT802	0 V VOM ② reading.
FM1: 75.0–91.5 MHz FM2: 86.5–109.5 MHz (Tune the receiver in.)	IFT803	Maximum TUNING meter reading.


FM1 or FM2
front-end
IFT001 (FM1
front-end)
IFT051 (FM2
front-end)



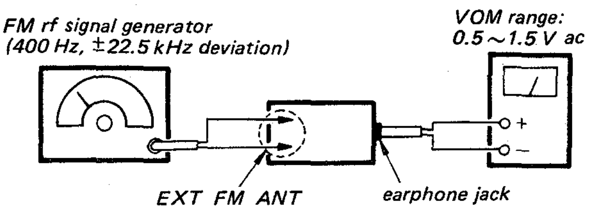


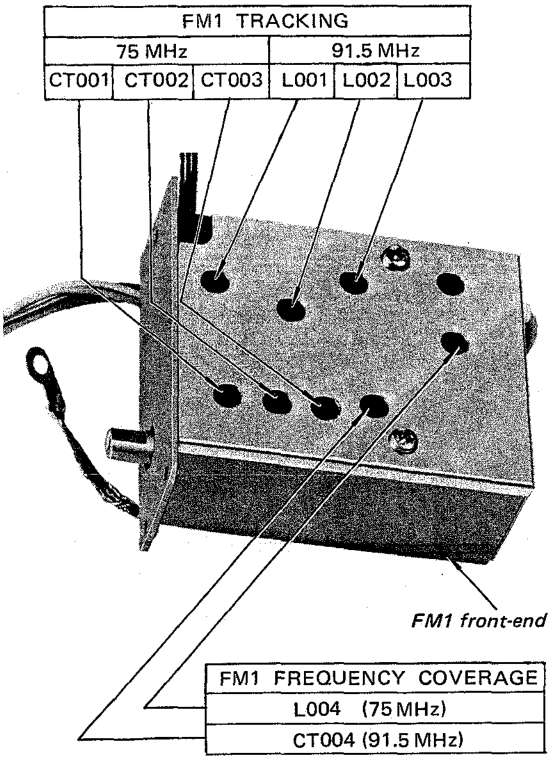
3-6. FM1 FREQUENCY COVERAGE AND TRACKING ADJUSTMENTS

Setting:

BAND SELECTOR switch:	FM1
VOLUME control:	MAX
TONE controls	MAX
MUTING switch:	OFF
AFC switch:	OFF

Setup:


FM rf signal generator
(400 Hz, ±22.5 kHz deviation)
VOM range:
0.5～1.5 V ac
+
–
EXT FM ANT
earphone jack


FM1 front-end

FM1 TRACKING					
75 MHz			91.5 MHz		
CT001	CT002	CT003	L001	L002	L003

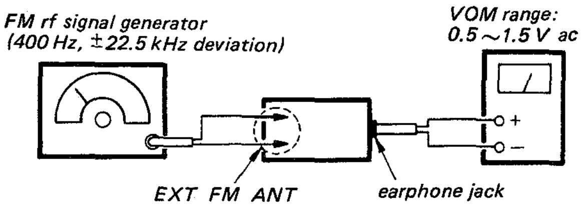
FM1 FREQUENCY COVERAGE
L004 (75 MHz)
CT004 (91.5 MHz)

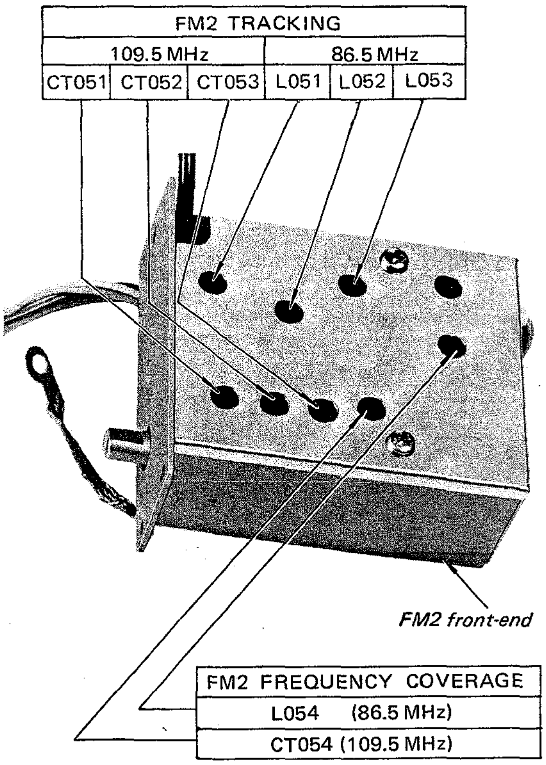
3-7. FM2 FREQUENCY COVERAGE AND TRACKING ADJUSTMENTS

Setting:

BAND SELECTOR switch:	FM2
VOLUME control:	MAX
TONE controls	MAX
MUTING switch:	OFF
AFC switch:	OFF

Setup:


FM rf signal generator
(400 Hz, ±22.5 kHz deviation)
VOM range:
0.5～1.5 V ac
+
–
EXT FM ANT
earphone jack


FM2 front-end

FM2 TRACKING					
109.5 MHz			86.5 MHz		
CT051	CT052	CT053	L051	L052	L053

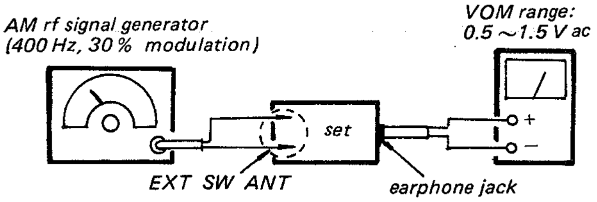
FM2 FREQUENCY COVERAGE
L054 (86.5 MHz)
CT054 (109.5 MHz)

3-8. SW 1st IF ADJUSTMENT

Setting:

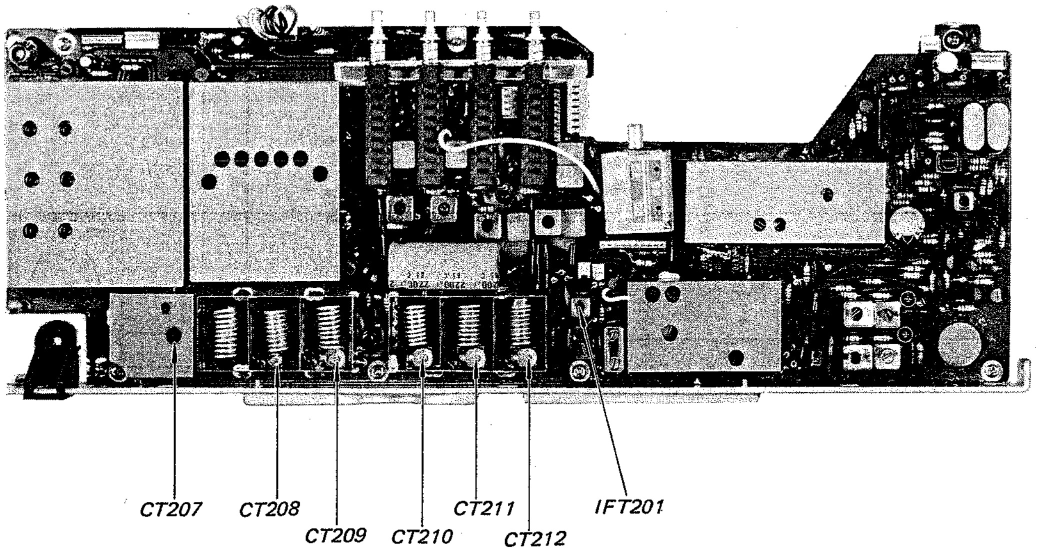
BAND SELECTOR switch: SW
MODE switch: NORMAL
VOLUME control: center of rotation
TONE control: center of rotation
NOISE BLANKER switch: OFF

Setup:


AM rf signal generator
(400 Hz, 30 % modulation)
VOM range:
0.5 ~1.5 V ac
set
+
−
EXT SW ANT
earphone jack

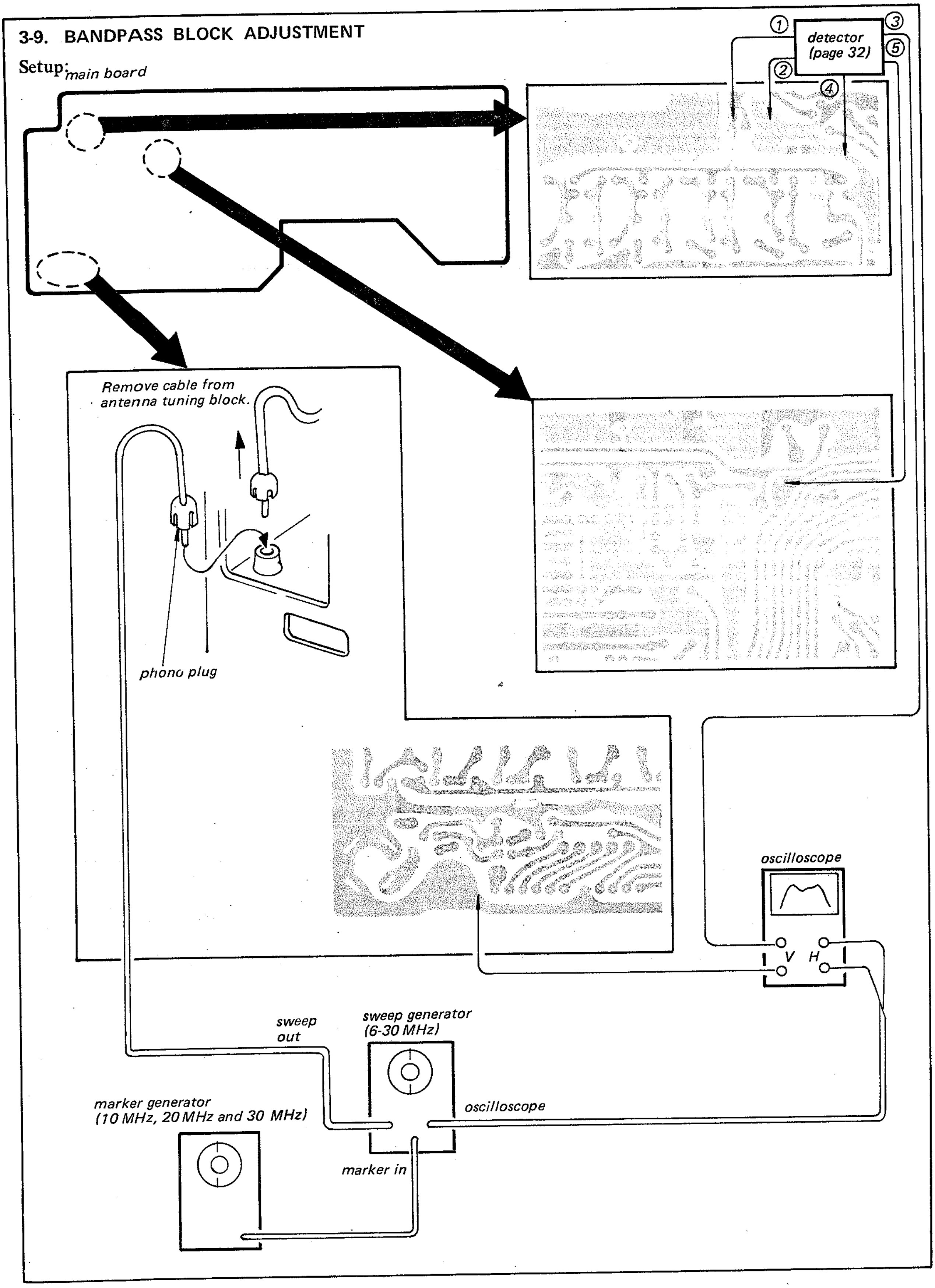
Procedure:

1. Set the AM rf signal generator to an appropriate frequency between 1.6 MHz and 30 MHz.
2. Tune the set in to the frequency set in step 1.
3. Adjust CTs207, 208, 209, 210, 211 and 212, and IFT201 for maximum VOM reading.


CT207
CT208
CT209
CT210
CT211
CT212
IFT201

3-9. BANDPASS BLOCK ADJUSTMENT

Setup:

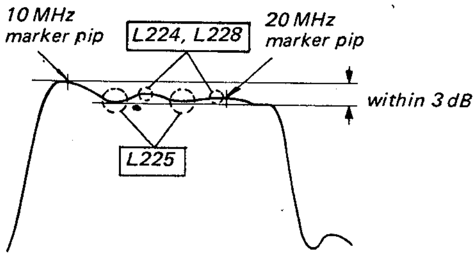

main board
①
②
③
④
⑤
detector (page 32)
Remove cable from antenna tuning block.
phono plug
oscilloscope
V
H
sweep out
sweep generator (6-30 MHz)
marker generator (10 MHz, 20 MHz and 30 MHz)
oscilloscope
marker in

Setting:

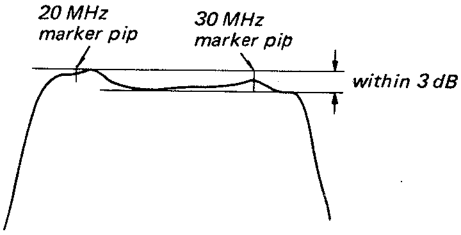
BAND SELECTOR switch: SW
VOLUME control: center of rotation
TONE controls: center of rotation
Marker Generator Frequencies: 10, 20 and 30 MHz

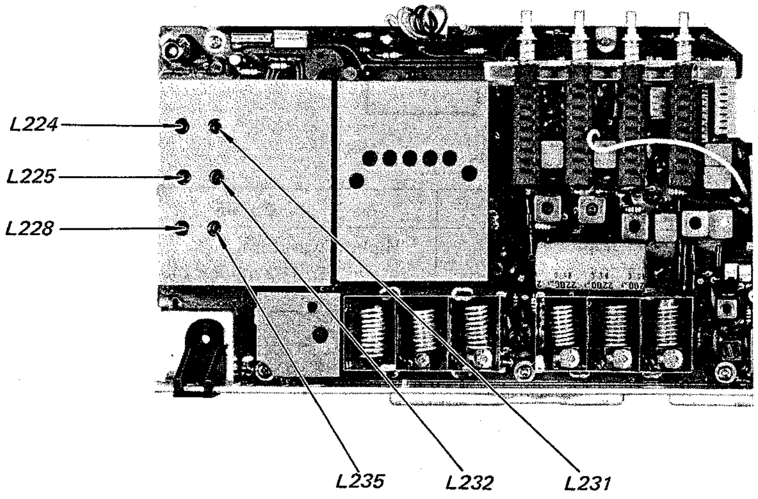
Procedure:

1. SW BAND SELECTOR switch: 10 MHz
   Sweep Generator Frequency: 6-30 MHz
2. Adjust L224, 225 and 228 to obtain a waveform shown below.


10 MHz marker pip
L224, L228
20 MHz marker pip
within 3 dB
L225

3. SW BAND SELECTOR switch: 20 MHz
   Sweep Generator Frequency: 15-35 MHz
4. Adjust L231, 232 and 235 to obtain a waveform shown below.


20 MHz marker pip
30 MHz marker pip
within 3 dB


L224
L225
L228
L235
L232
L231

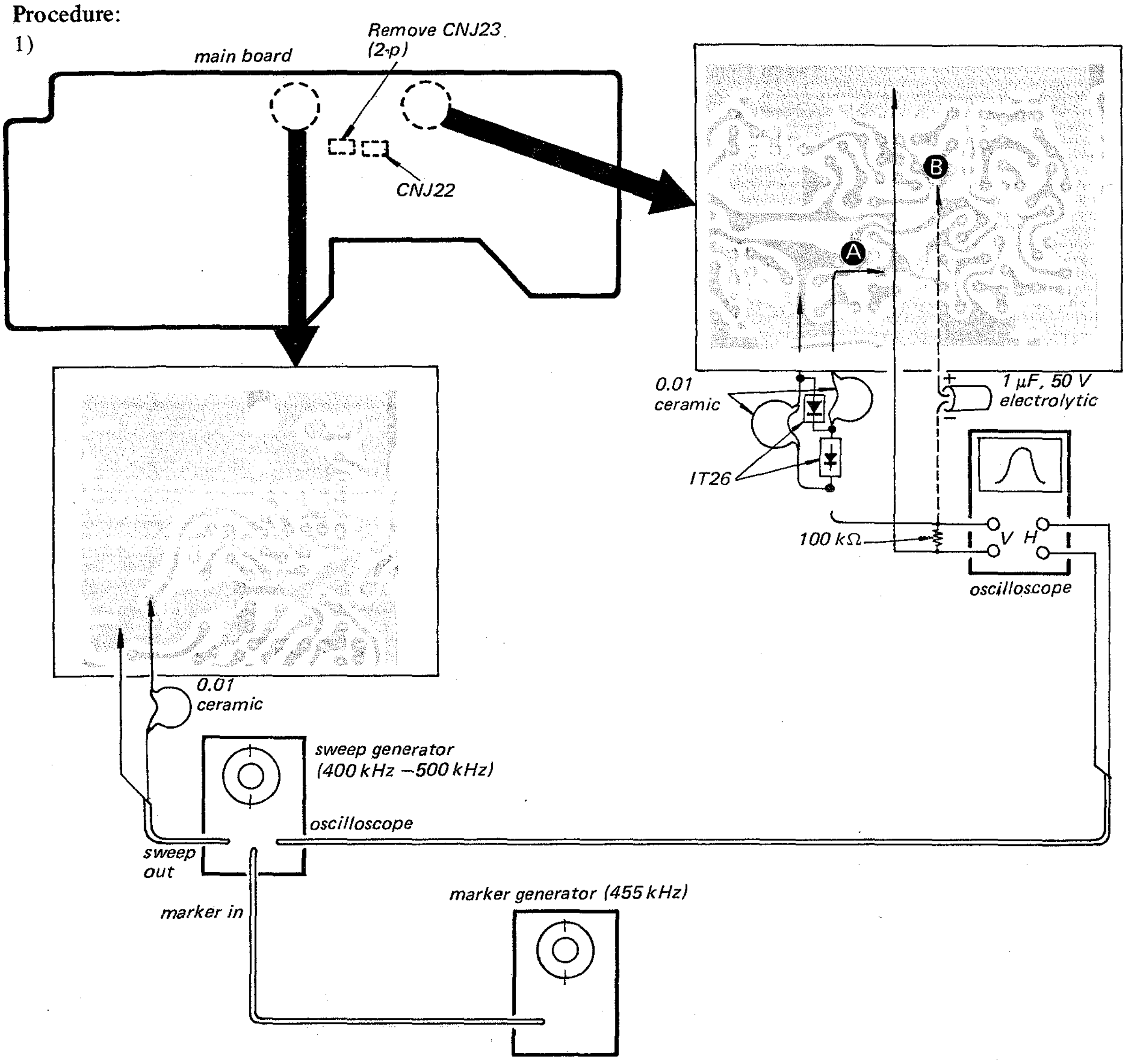
3-10. NOISE BLANKER ADJUSTMENT

Setting:

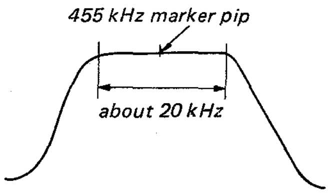
BAND SELECTOR switch: SW
NOISE BLANKER switch: ON

Procedure:

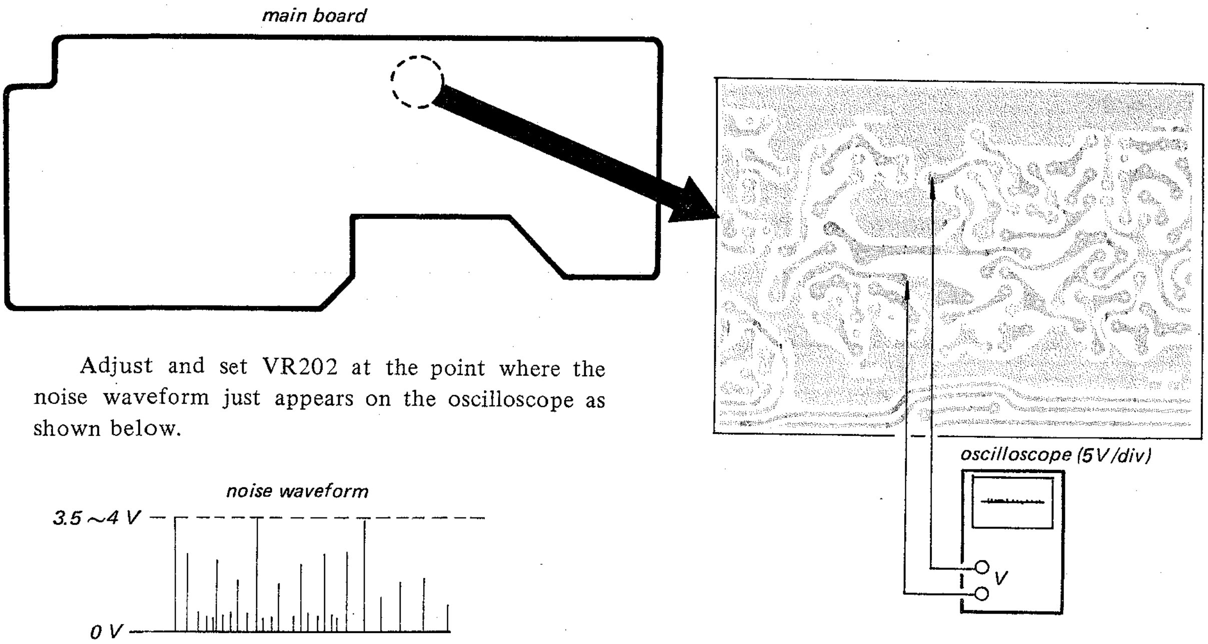
1)


main board
Remove CNJ23 (2-p)
CNJ22
Ⓑ
Ⓐ
0.01 ceramic
IT26
1 μF, 50 V electrolytic
100 kΩ
V
H
oscilloscope
0.01 ceramic
sweep generator (400 kHz –500 kHz)
oscilloscope
sweep out
marker in
marker generator (455 kHz)

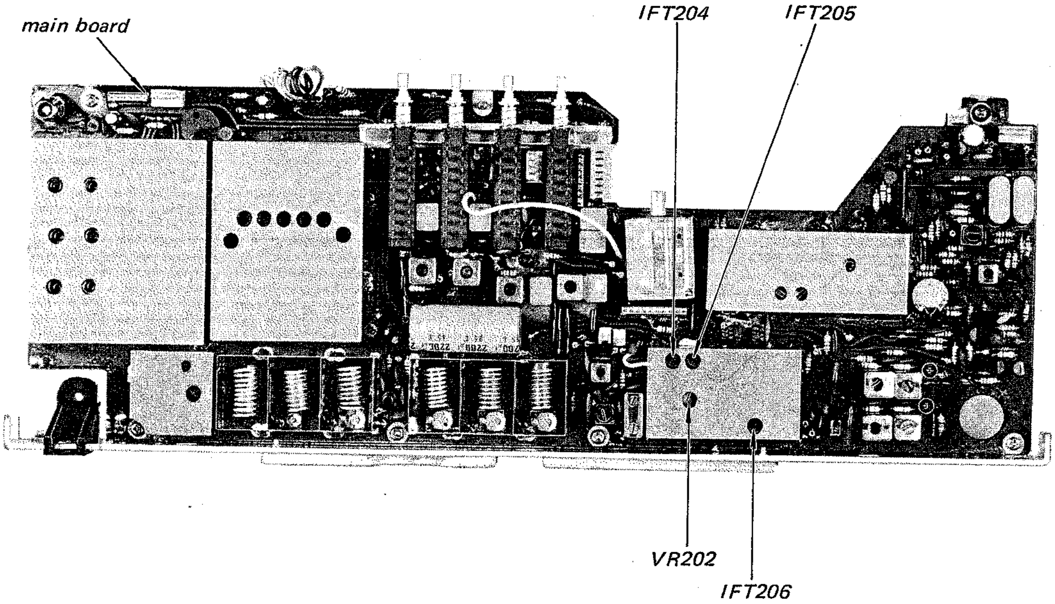
RF GAIN control: MIN

Adjust	Obtain
IFT204 IFT205 (Connect oscilloscope to Ⓐ.)	Highest waveform  455 kHz marker pip about 20 kHz
IFT206 (Connect oscilloscope to Ⓑ.)	

2) RF GAIN control: MAX/NORMAL


main board
oscilloscope (5V/div)
V
noise waveform
3.5 ~4 V
0 V

Adjust and set VR202 at the point where the noise waveform just appears on the oscilloscope as shown below.


main board
IFT204
IFT205
VR202
IFT206

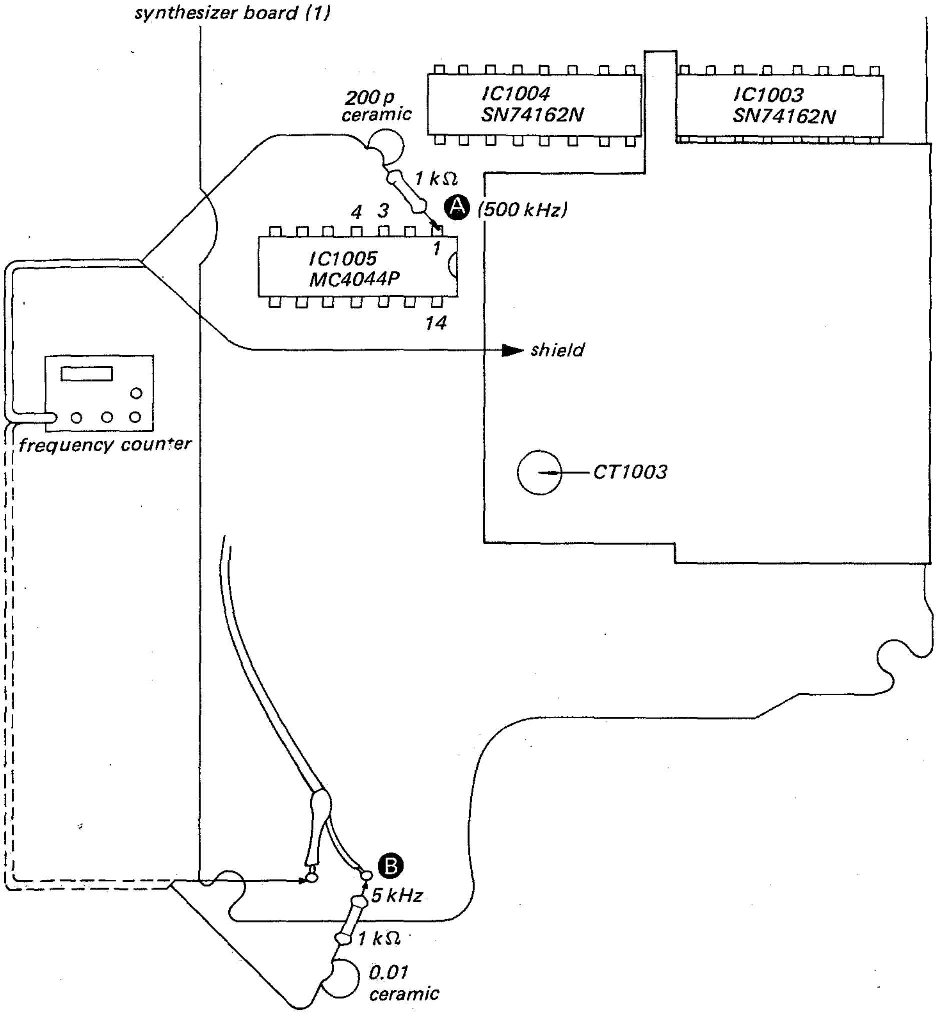
3-11. 500 kHz REFERENCE OSCILLATOR ADJUSTMENT

Setting:

BAND SELECTOR switch: SW

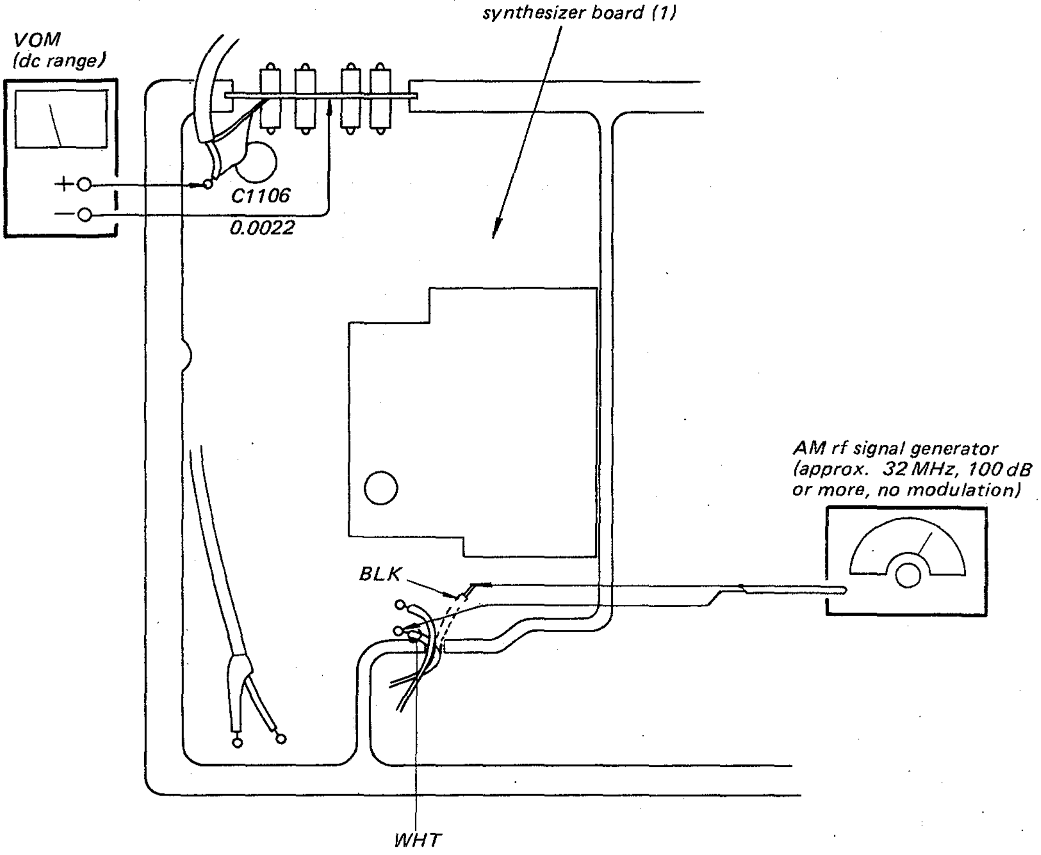
Procedure:

1)


synthesizer board (1)
200 p ceramic
IC1004 SN74162N
IC1003 SN74162N
1 kΩ
4 3
Ⓐ (500 kHz)
1
IC1005 MC4044P
14
shield
frequency counter
CT1003
Ⓑ
5 kHz
1 kΩ
0.01 ceramic

Adjust	Connect Frequency Counter to	Frequency Counter Reading
CT1003	Ⓐ	500,000 Hz ± 1 Hz
(Check)	Ⓑ	5,000 Hz

2) SW BAND SELECTOR switch: 29 MHz
Unsolder a white wire.


synthesizer board (1)
VOM
(dc range)
+
−
C1106
0.0022
AM rf signal generator
(approx. 32 MHz, 100 dB
or more, no modulation)
BLK
WHT

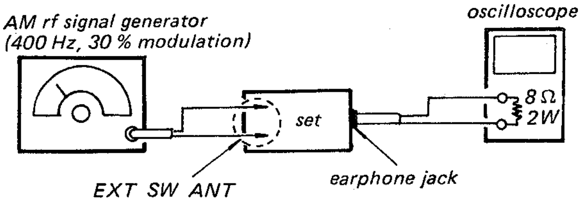
Adjust AM Rf Signal Generator Frequency	VOM Reading
around 32 MHz	0.7 V
below the frequency obtained above	6.3 V

3-12. SW 1st MIXER BALANCE ADJUSTMENT

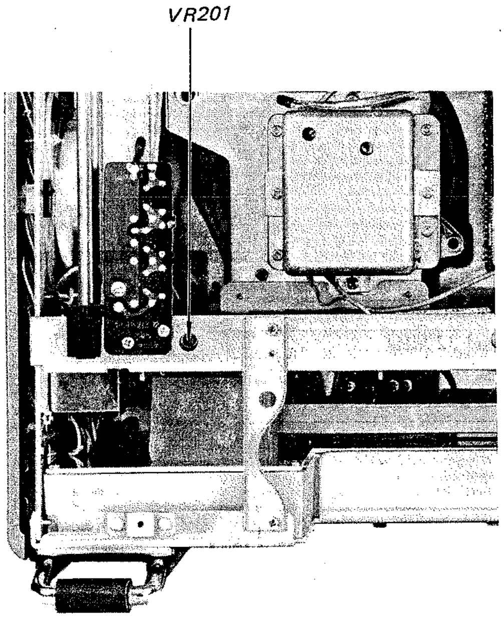
Setting:

BAND SELECTOR switch: SW
SW BAND SELECTOR switch: 22 MHz
VOLUME control: center of rotation
TONE controls: center of rotation
MODE switch: AM NORMAL

Setup:


AM rf signal generator
(400 Hz, 30 % modulation)
oscilloscope
set
8 Ω
2W
EXT SW ANT
earphone jack

AM Rf Signal Generator Frequency	Tune the Set to	Adjust
22.57 MHz 70 dB	around 22.8 MHz to obtain a maximum waveform	VR201 to obtain a minimum waveform

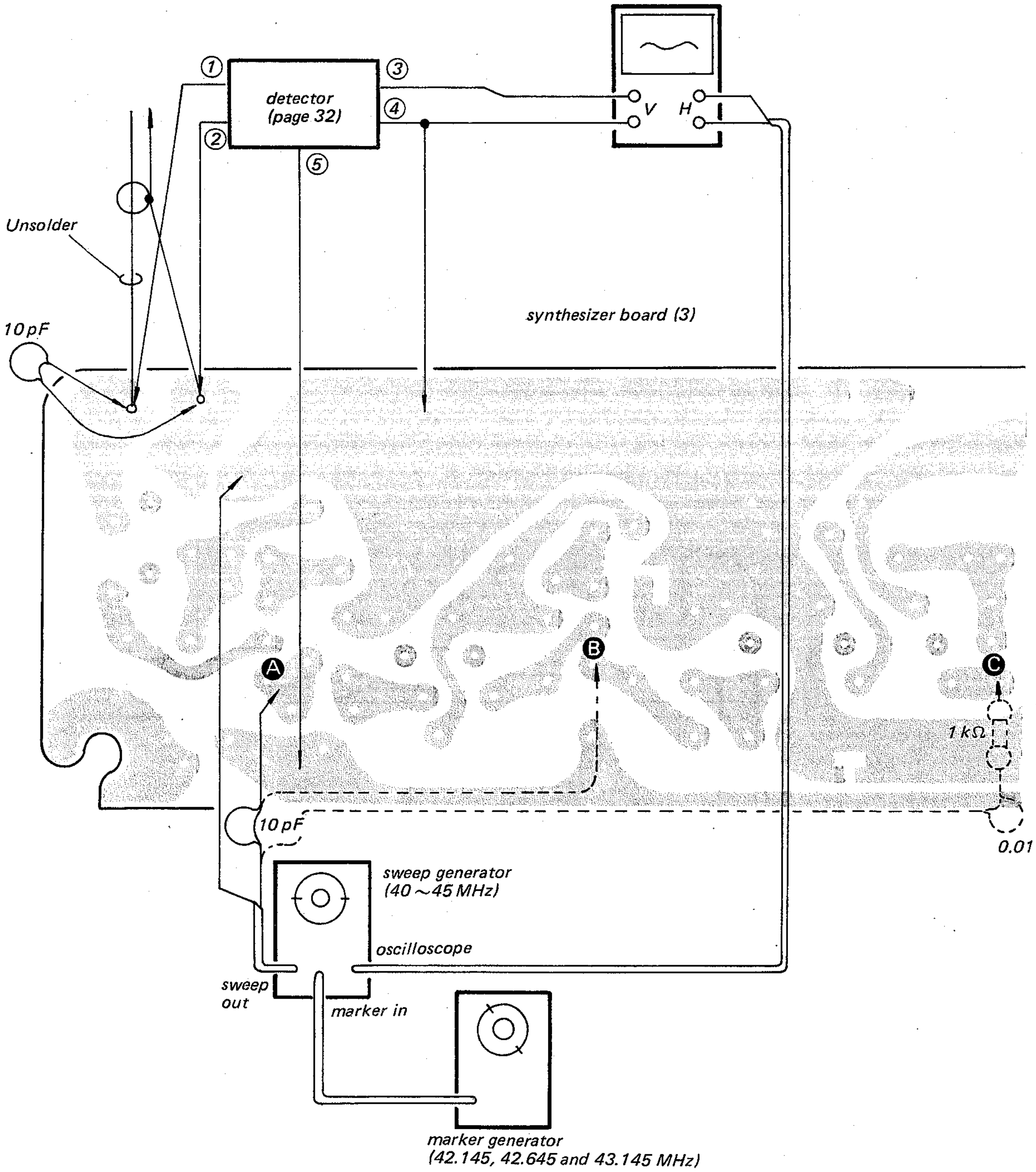


3-13. SYNTHESIZER SECTION ADJUSTMENTS

Setting:

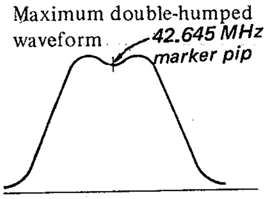
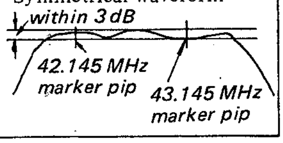
BAND SELECTOR switch: SW

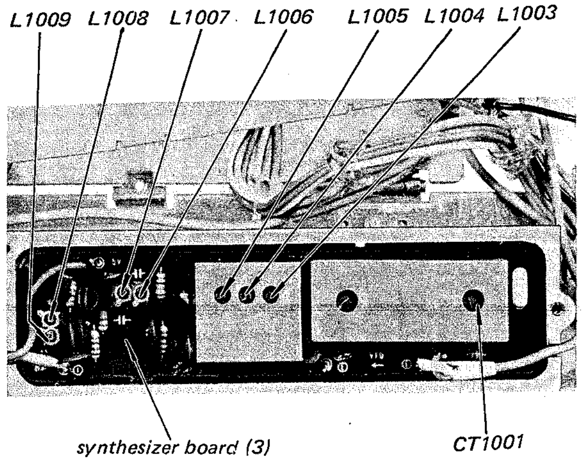
3-13-1. 42 MHz BPF ADJUSTMENT


oscilloscope
①
②
③
④
⑤
detector (page 32)
V
H
Unsolder
10 pF
synthesizer board (3)
A
B
C
1 kΩ
10 pF
0.01
sweep generator (40 ∼ 45 MHz)
oscilloscope
sweep out
marker in
marker generator (42.145, 42.645 and 43.145 MHz)

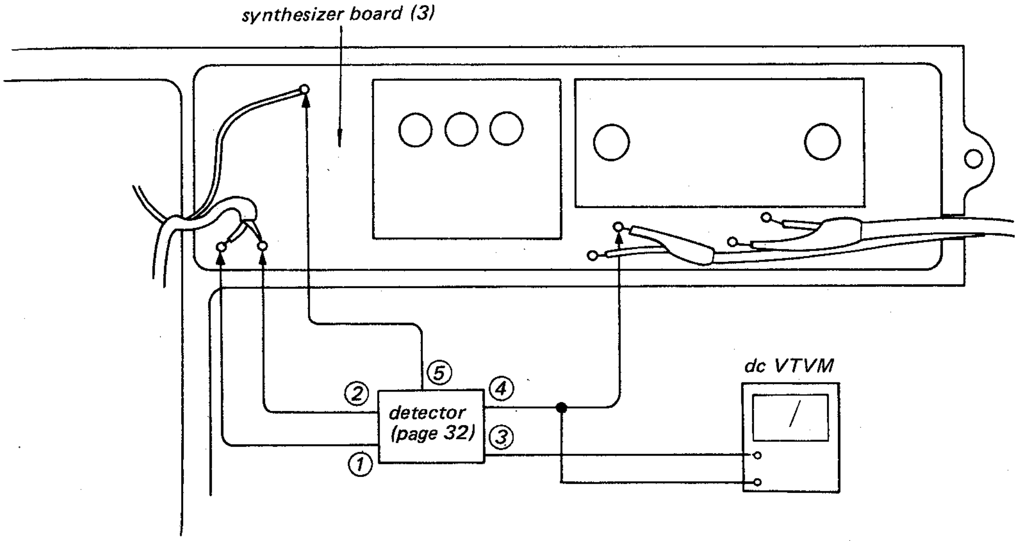
Procedure:

1. Turn CT1001 and stop the oscillation of 45.6 MHz. The 45.6 MHz pip disappears from the waveform on the oscilloscope.
2. Turn the cores, of L1003 through L1006 counterclockwise until they place on top of the coils.
3.

Connect Sweep Out to	Adjust	Obtain
Ⓐ	L1008 L1009	Maximum double-humped waveform  42.645 MHz marker pip
Ⓑ	L1006 L1007	
Ⓒ	L1003 L1004 L1005	
Ⓒ (Reduce sweep out level)	L1003 through L1009 (fine adjust)	Symmetrical waveform  within 3 dB 42.145 MHz marker pip 43.145 MHz marker pip



L1009
L1008
L1007
L1006
L1005
L1004
L1003
synthesizer board (3)
CT1001



synthesizer board (3)
⑤
②
④
detector (page 32)
③
①
dc VTVM

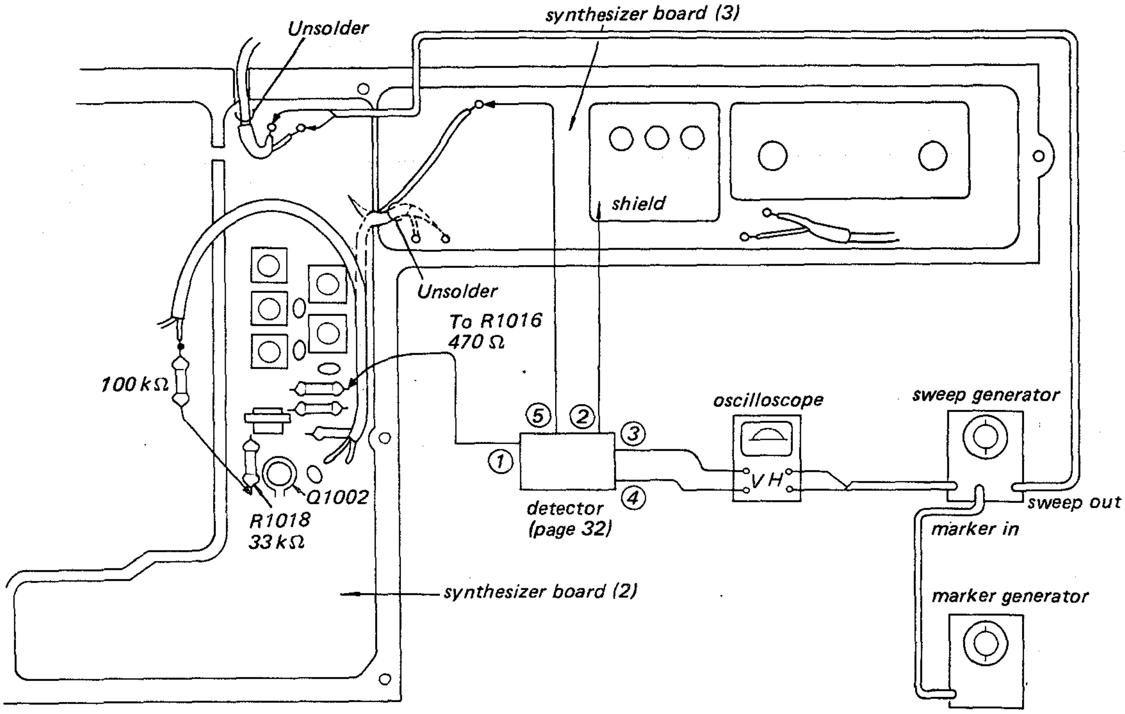
4. Turn the tuning dial throughout the range and confirm that the VTVM reading variation is within 3 dB. If not, perform steps 1 through 3.
5. Turn CT1001 and oscillate 45.6 MHz. 45.6 MHz pip appears on the waveform again.

3-13-2. 46-76 MHz BPF ADJUSTMENT

Setting:

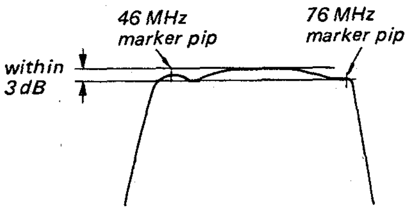
BAND SELECTOR switch: SW

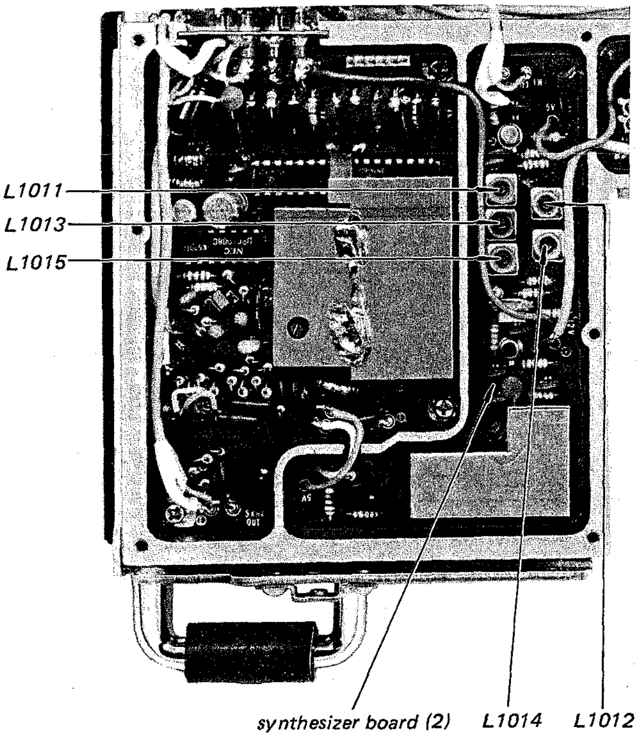
Setup:


Unsolder
synthesizer board (3)
shield
Unsolder
To R1016
470 Ω
100 kΩ
Q1002
R1018
33 kΩ
⑤
②
③
①
④
detector
(page 32)
oscilloscope
V H
sweep generator
sweep out
marker in
marker generator
synthesizer board (2)

Procedure:

Adjust	Obtain
L1012 L1014 (ORG)	Maximum amplitude at 76 MHz.
L1013 (RED)	Maximum amplitude at 46 MHz.
L1011 L1015 (BLU)	Same amplitude at 46 MHz and 76 MHz.
Repeat all the above adjustment.	



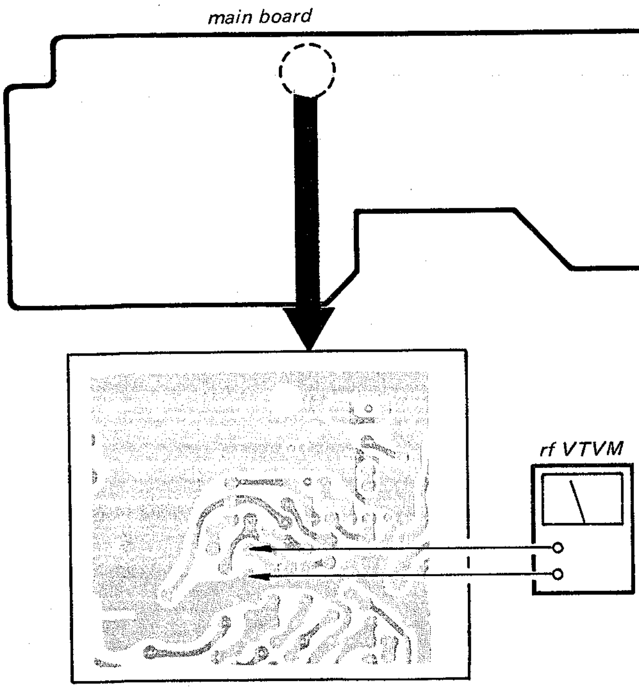

L1011
L1013
L1015
synthesizer board (2)
L1014
L1012

3-13-3. SW 2nd LOCAL OSCILLATOR ADJUSTMENT

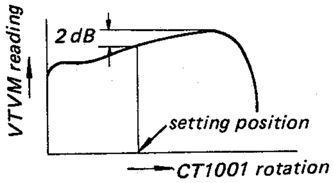
Setting:

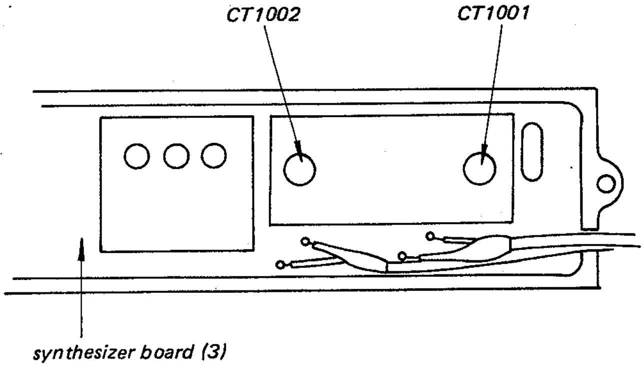
BAND SELECTOR switch: SW

Setup:


main board
rf VTVM

Procedure:

Adjust	Obtain
CT1001	Setting position. 
CT1002	Minimum VTVM reading.

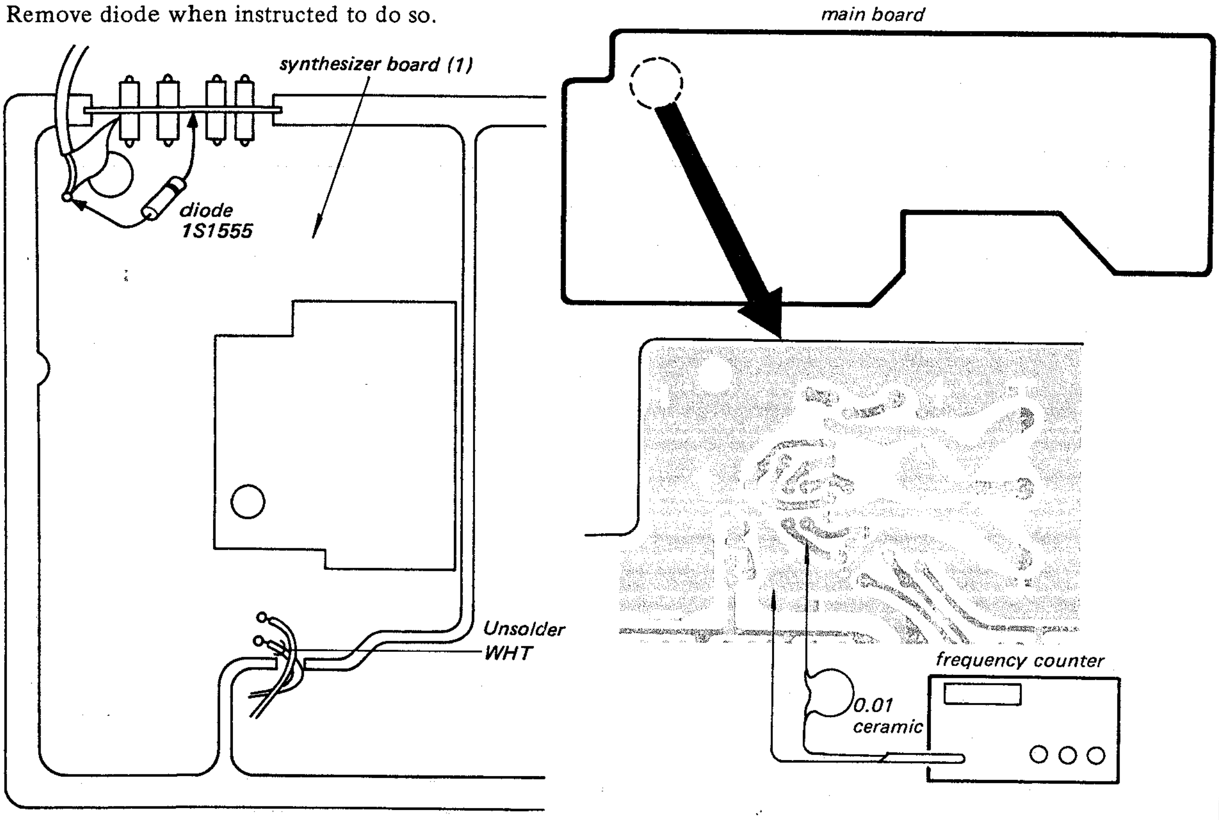

CT1002
CT1001
synthesizer board (3)

3-13-4. VCO ADJUSTMENT

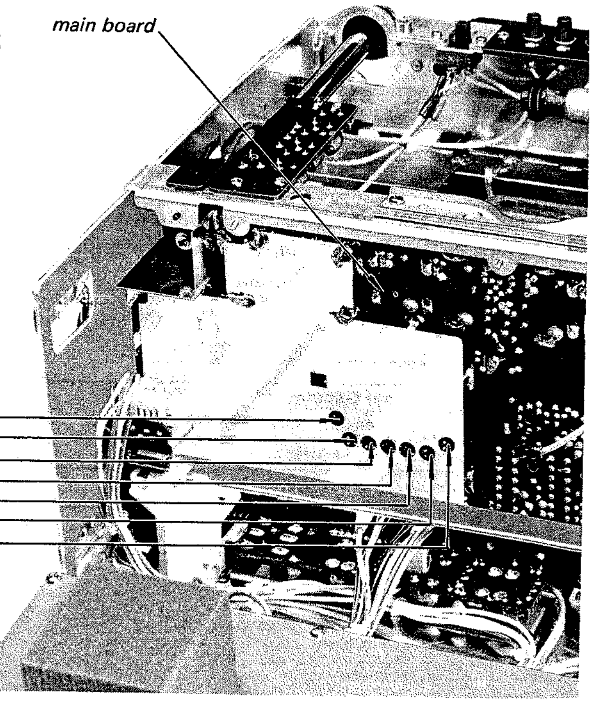
Setting:

BAND SELECTOR switch: SW

Unsolder white wire and install a diode as shown. Remove diode when instructed to do so.


main board
synthesizer board (1)
diode
1S1555
Unsolder
WHT
frequency counter
0.01
ceramic

Step	SW BAND SELECTOR	Adjust	Frequency Counter Reading
1	2 MHz	L268	44.0 MHz
2	Remove diode 1S1555.		
3	3 MHz	L274	52.3 MHz
4	6 MHz	L269	56.1 MHz
5	10 MHz	L270	61.6 MHz
6	15 MHz	L273	66.4 MHz
7	20 MHz	L271	71.7 MHz
8	25 MHz	L272	76.8 MHz
9	Fix all coils with wax after the adjustment.		

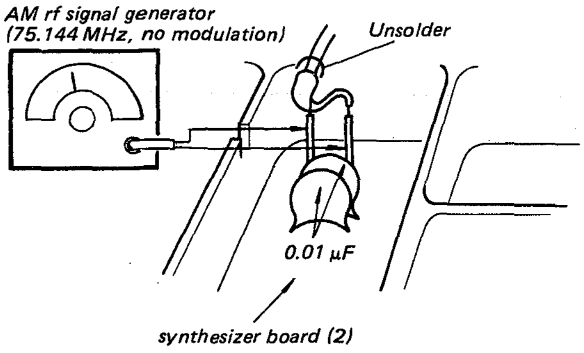

main board
L268
L269
L270
L271
L272
L273
L274

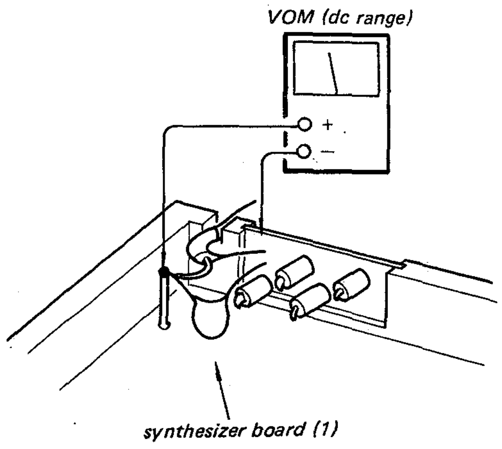
3-13-5. SYNTHESIZER SECTION CHECKOUT

Setting:

BAND SELECTOR switch: SW
SW BAND SELECTOR switch: 29 MHz

Setup:


AM rf signal generator
(75.144 MHz, no modulation)
Unsolder
0.01 µF
synthesizer board (2)


VOM (dc range)
+
−
synthesizer board (1)

Procedure:

1. Turn the SW tuning knob and obtain a 29 MHz 999 kHz indication on the digital frequency indicator on the front panel.
2. Fine adjust the frequency of AM rf signal generator around 75.14 MHz.

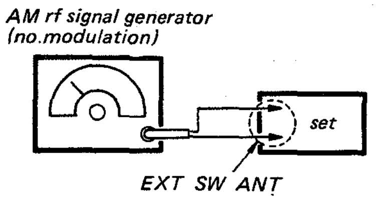
AM Rf Signal Generator Frequency	VOM Indication
above 75.144 MHz	0.7 V
below 75.144 MHz	6.3 V

3-13-6. SW SPURIOUS BEAT ADJUSTMENT

Setting:

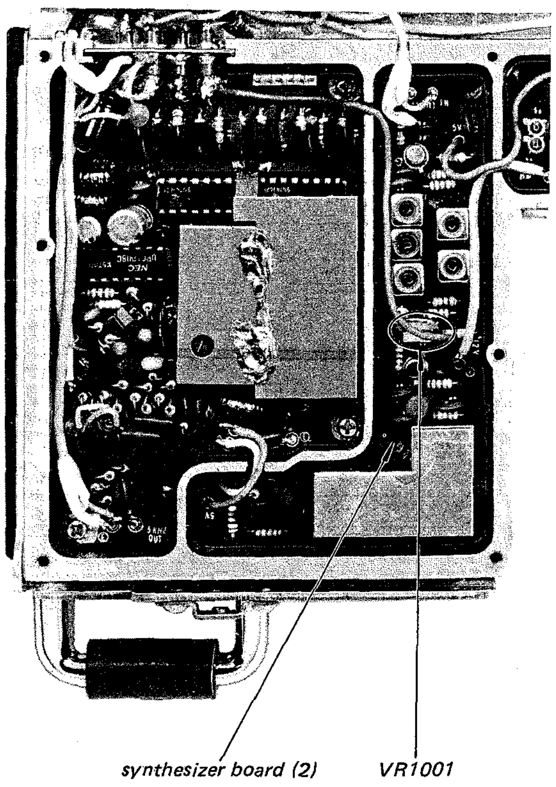
BAND SELECTOR switch:	SW
SW BAND SELECTOR switch:	29 MHz
VOLUME control:	MAX
TONE controls:	MAX
RF GAIN control:	MAX/NORMAL

Setup:


AM rf signal generator
(no.modulation)
set
EXT SW ANT

Procedure:

AM Rf Signal Generator Frequency	Adjust
approximately 29.352 MHz or 29.852 MHz	VR1001 for a minimum beat note


synthesizer board (2)
VR1001

3-2. TAPE RECORDER SECTION

PRECAUTION

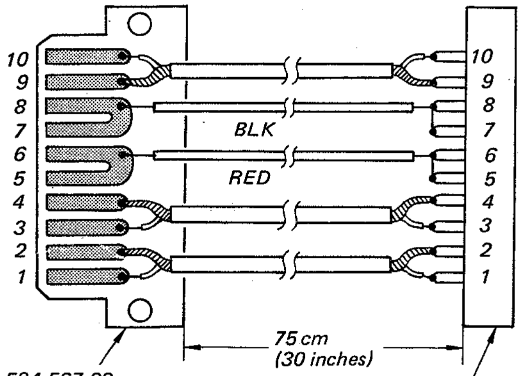
1. Clean the following parts with a denatured-alcohol-moistened swab:

   record/playback head — pinch roller
   erase head — rubber belts
   capstan — idlers

2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply a suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Preparation of Extension Cable

Make an extension cable as shown below and connect it between the radio and tape recorder sections.



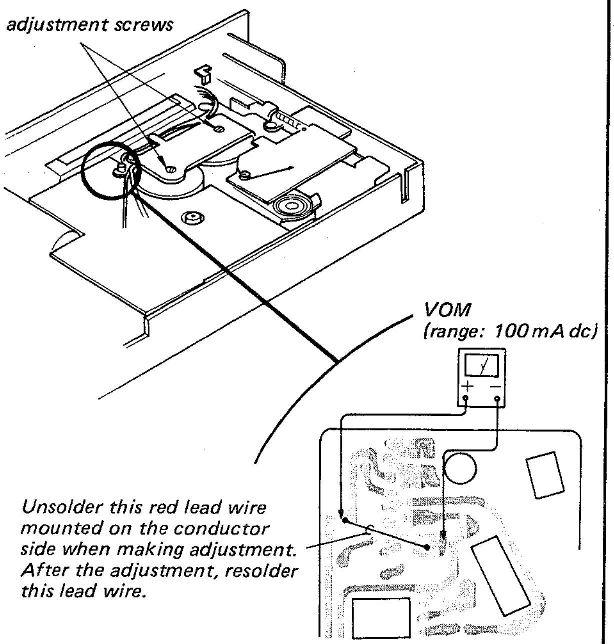
1-584-567-00
Form a connector like this using the tape record sub circuit board.

1-507-302-00
printed circuit board edge connector

Flywheel Thrust Play Adjustment

Procedure:

1. Mode: playback



Unsolder this red lead wire mounted on the conductor side when making adjustment. After the adjustment, resolder this lead wire.

2. Turn the adjustment screws counterclockwise until the screw tip is detached from the flywheel shafts.
3. Gradually turn either of the adjustment screws clockwise to the position where the motor current suddenly increases.
4. Then, turn the screw counterclockwise about ¼ turn from the position obtained in step 3.
5. Perform steps 3 and 4 for the another adjustment screw.
6. After the adjustment, apply a suitable locking compound to the screws.

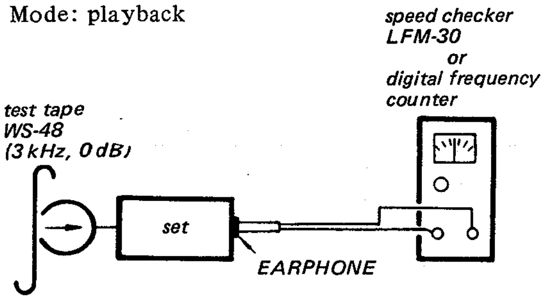
Tape Speed Adjustment

Setting:

VOLUME control: mechanical mid

Procedure:

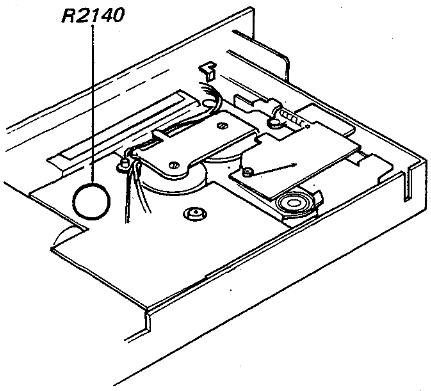
Mode: playback


speed checker
LFM-30
or
digital frequency
counter
test tape
WS-48
(3 kHz, 0 dB)
set
EARPHONE

Specification:

Speed Checker	Digital Frequency Counter
−0.5 — −1.5%	2985 — 2955 Hz

Adjustment Location:
– record/playback board –



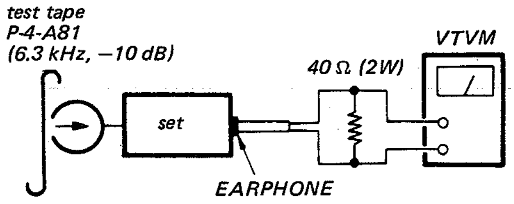
Record/playback Head Azimuth Adjustment

Setting:

VOLUME control: mechanical mid

Procedure:

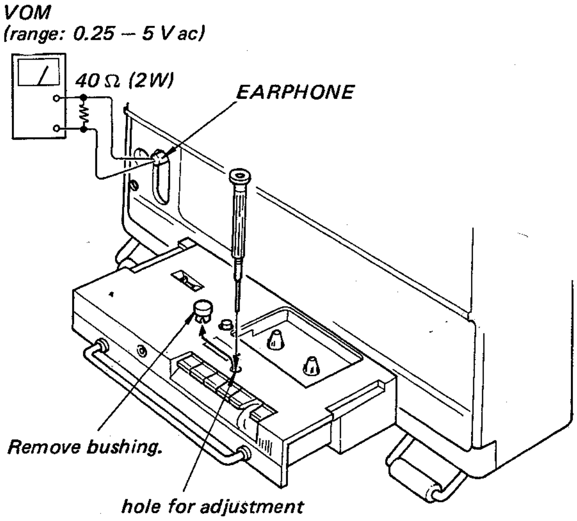
1. Mode: playback


test tape
P-4-A81
(6.3 kHz, −10 dB)
VTVM
40 Ω (2W)
set
EARPHONE

2. Turn the adjustment screw for the highest VTVM reading.

Note: Several peaks may appear, take the highest.

Adjustment Location:


VOM
(range: 0.25 – 5 V ac)
40 Ω (2W)
EARPHONE
Remove bushing.
hole for adjustment

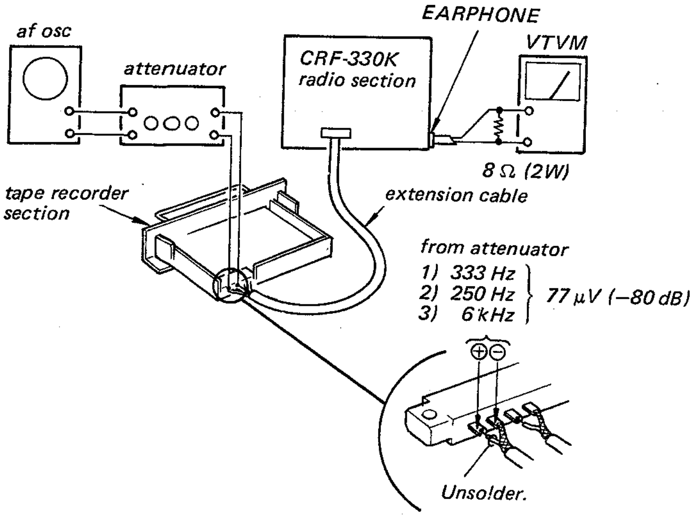
Record Bias Adjustment

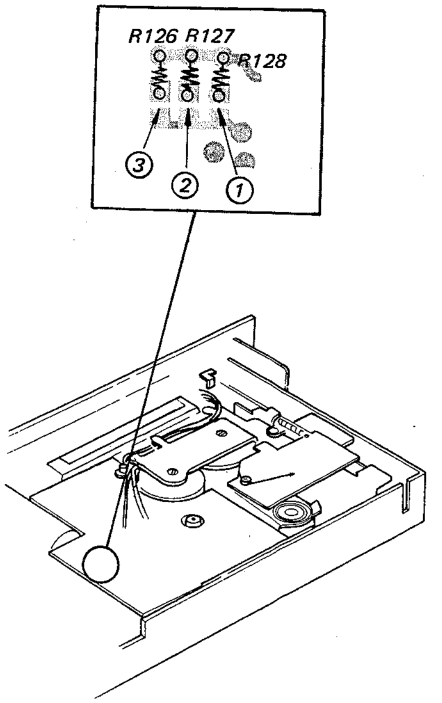
Adjustment Location:
– record/playback board –

Setting:

TONE controls: mechanical mid

Procedure:


af osc
attenuator
CRF-330K radio section
EARPHONE
VTVM
8 Ω (2W)
tape recorder section
extension cable
from attenuator
1) 333 Hz
2) 250 Hz
3) 6 kHz
77 µV (−80 dB)
⊕⊖
Unsolder.


R126 R127
R128
③
②
①

1. FUNCTION: RADIO
   Mode: record
2. Mode: playback
   Playback 333 Hz. Adjust VOLUME control for 0.25 V (−10 dB) VTVM reading.
3. Repeating the above steps, adjust as follows:

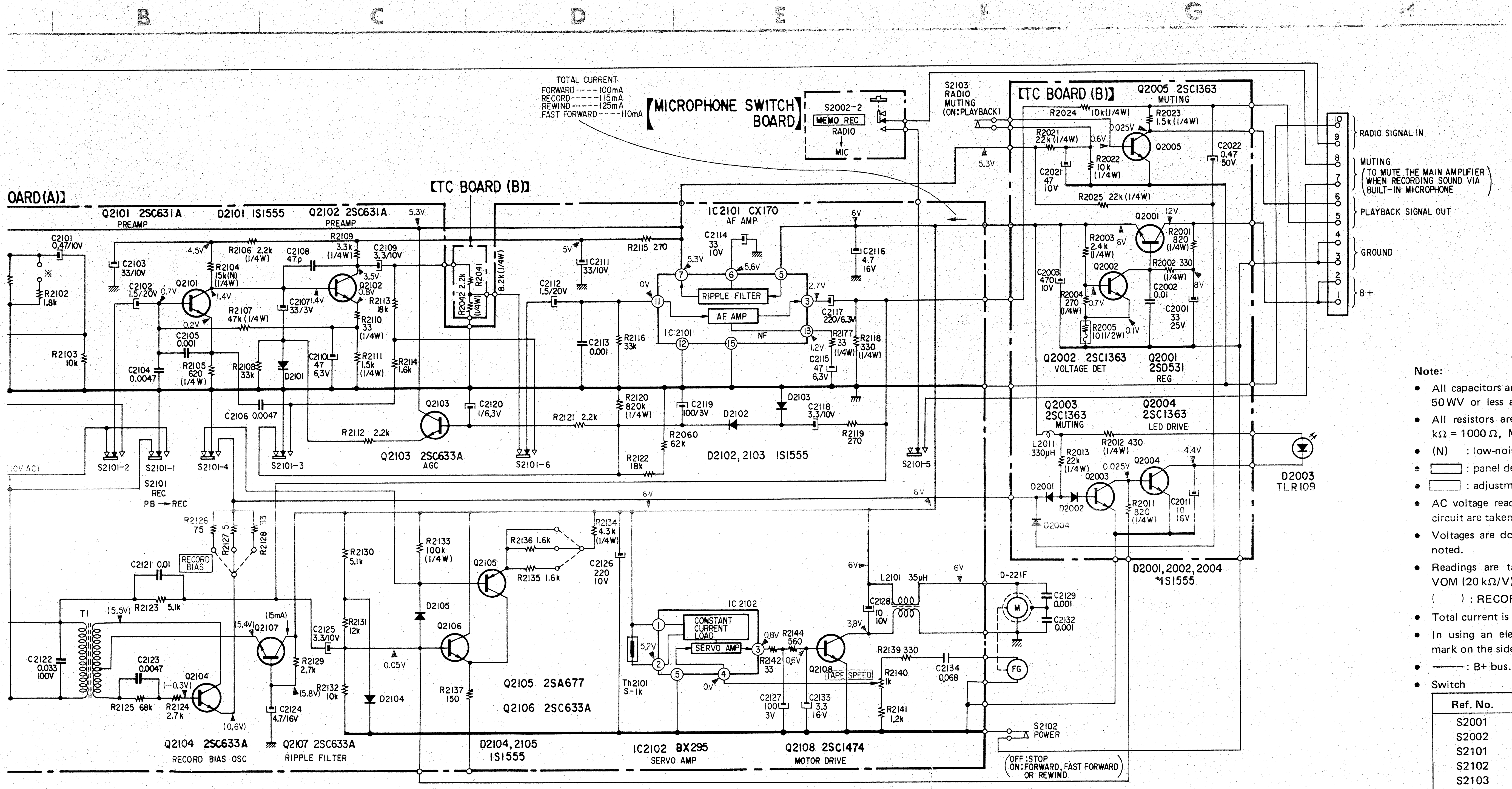
Playback	Adjust pattern connection	Level difference
250 Hz 6 kHz	①,②,③	within 18 dB

Pattern connection	6 kHz VTVM reading
①	down
②	↕
③	up

4. If necessary, repeat above steps.

MEMO

: DIAGRAM – Tape Recorder Section –


B
C
D
E
F
G
H
TOTAL CURRENT
FORWARD----100mA
RECORD----115mA
REWIND----125mA
FAST FORWARD----110mA
MICROPHONE SWITCH BOARD
S2002-2
MEMO REC
RADIO
MIC
S2103
RADIO MUTING
(ON:PLAYBACK)
TC BOARD (B)
Q2005 2SC1363
MUTING
R2024 10k(1/4W)
R2023 1.5k(1/4W)
R2021 22k(1/4W)
R2022 10k (1/4W)
C2021 47 10V
C2022 0.47 50V
R2025 22k(1/4W)
Q2001
R2003 2.4k (1/4W)
R2001 820 (1/4W)
R2002 330 (1/4W)
C2003 470 10V
Q2002
R2004 270 (1/4W)
R2005 10(1/2W)
C2002 0.01
C2001 33 25V
Q2002 2SC1363
VOLTAGE DET
Q2001 2SD531
REG
Q2003 2SC1363
MUTING
Q2004 2SC1363
LED DRIVE
L2011 330μH
R2013 22k (1/4W)
R2012 430 (1/4W)
R2011 820 (1/4W)
C2011 10 16V
D2001
D2002
D2004
D2001,2002,2004 1S1555
D2003 TLR109
RADIO SIGNAL IN
MUTING
(TO MUTE THE MAIN AMPLIFIER WHEN RECORDING SOUND VIA BUILT-IN MICROPHONE)
PLAYBACK SIGNAL OUT
GROUND
B+
OARD(A)
Q2101 2SC631A
PREAMP
D2101 1S1555
Q2102 2SC631A
PREAMP
TC BOARD (B)
C2101 0.47/10V
C2103 33/10V
C2102 1.5/20V
R2102 1.8k
R2103 10k
R2104 15k(N) (1/4W)
R2106 2.2k (1/4W)
C2108 47p
R2109 3.3k (1/4W)
C2109 3.3/10V
R2107 47k (1/4W)
C2107 33/3V
R2113 18k
R2110 33 (1/4W)
C2105 0.001
C2104 0.0047
R2105 620 (1/4W)
R2108 33k
C2110 47 6.3V
R2111 1.5k (1/4W)
R2114 1.6k
C2106 0.0047
R2042 2.2k
R2041 8.2k(1/4W)
Q2103 2SC633A
AGC
C2120 1/6.3V
R2112 2.2k
C2111 33/10V
C2112 1.5/20V
C2113 0.001
R2116 33k
R2115 270
R2120 820k (1/4W)
R2121 2.2k
R2122 18k
R2060 62k
IC2101 CX170
AF AMP
C2114 33 10V
RIPPLE FILTER
AF AMP
NF
C2116 4.7 16V
C2117 220/6.3V
R2177 33 (1/4W)
R2118 330 (1/4W)
C2115 47 6.3V
C2119 100/3V
D2102
D2103
C2118 3.3/10V
R2119 270
D2102, 2103 1S1555
S2101-2
S2101-1
S2101-4
S2101-3
S2101-6
S2101-5
S2101
REC
PB → REC
R2126 75
R2127 5.1
R2128 33
RECORD BIAS
C2121 0.01
R2123 5.1k
T1
C2122 0.033 100V
C2123 0.0047
R2125 68k
R2124 2.7k
Q2104 2SC633A
RECORD BIAS OSC
Q2107 2SC633A
RIPPLE FILTER
R2129 2.7k
R2132 10k
C2124 4.7/16V
C2125 3.3/10V
R2130 5.1k
R2131 12k
D2104
R2133 100k (1/4W)
D2105
R2136 1.6k
R2135 1.6k
R2134 4.3k (1/4W)
C2126 220 10V
R2137 150
Q2105 2SA677
Q2106 2SC633A
D2104, 2105 1S1555
IC 2102
CONSTANT CURRENT LOAD
SERVO AMP
Th2101 S-1k
R2144 560
R2142 33
C2127 100 3V
C2133 3.3 16V
Q2108
TAPE SPEED
IC2102 BX295
SERVO AMP
Q2108 2SC1474
MOTOR DRIVE
L2101 35μH
C2128 10 10V
R2139 330
R2140 1k
R2141 1.2k
C2134 0.068
D-221F
C2129 0.001
C2132 0.001
FG
S2102
POWER
(OFF:STOP ON:FORWARD, FAST FORWARD OR REWIND)

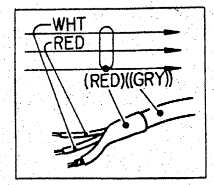
Note:

- All capacitors are in μF unless otherwise noted. pF = $\mu\mu$F 50 WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼ W unless otherwise noted. kΩ = 1000 Ω, MΩ = 1000kΩ
- (N) : low-noise resistor.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- AC voltage readings indicated by ⋆ in the bias oscillator circuit are taken with a VTVM.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20 kΩ/V).
  ( ) : RECORD < > : PLAYBACK
- Total current is measured with no cassette installed.
- In using an electret condenser microphone with a red mark on the side of the case, connect R2102 shown by ※ .
- —— : B+ bus.
- Switch

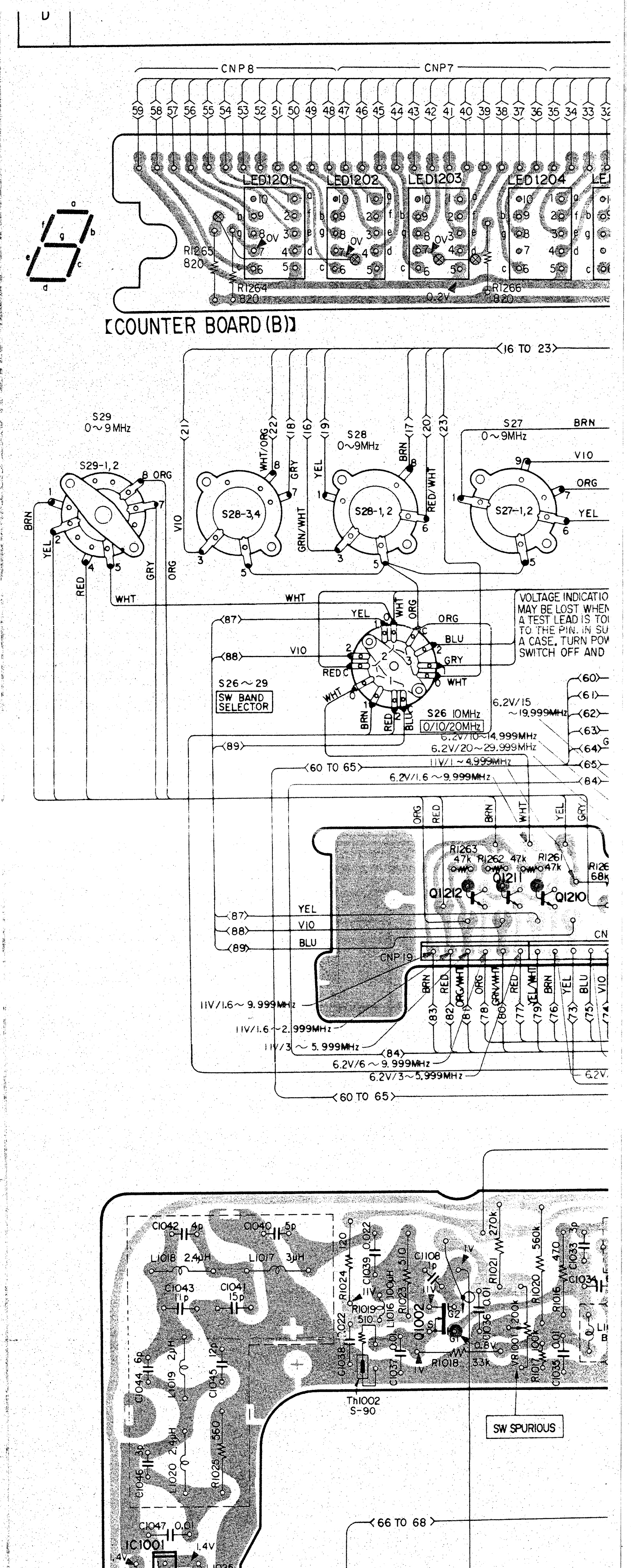
Ref. No.	Switch	Position
S2001	ISS	3
S2002	MEMO REC	RADIO
S2101	REC/PB	PB
S2102	POWER	OFF
S2103	RADIO MUTING	ON

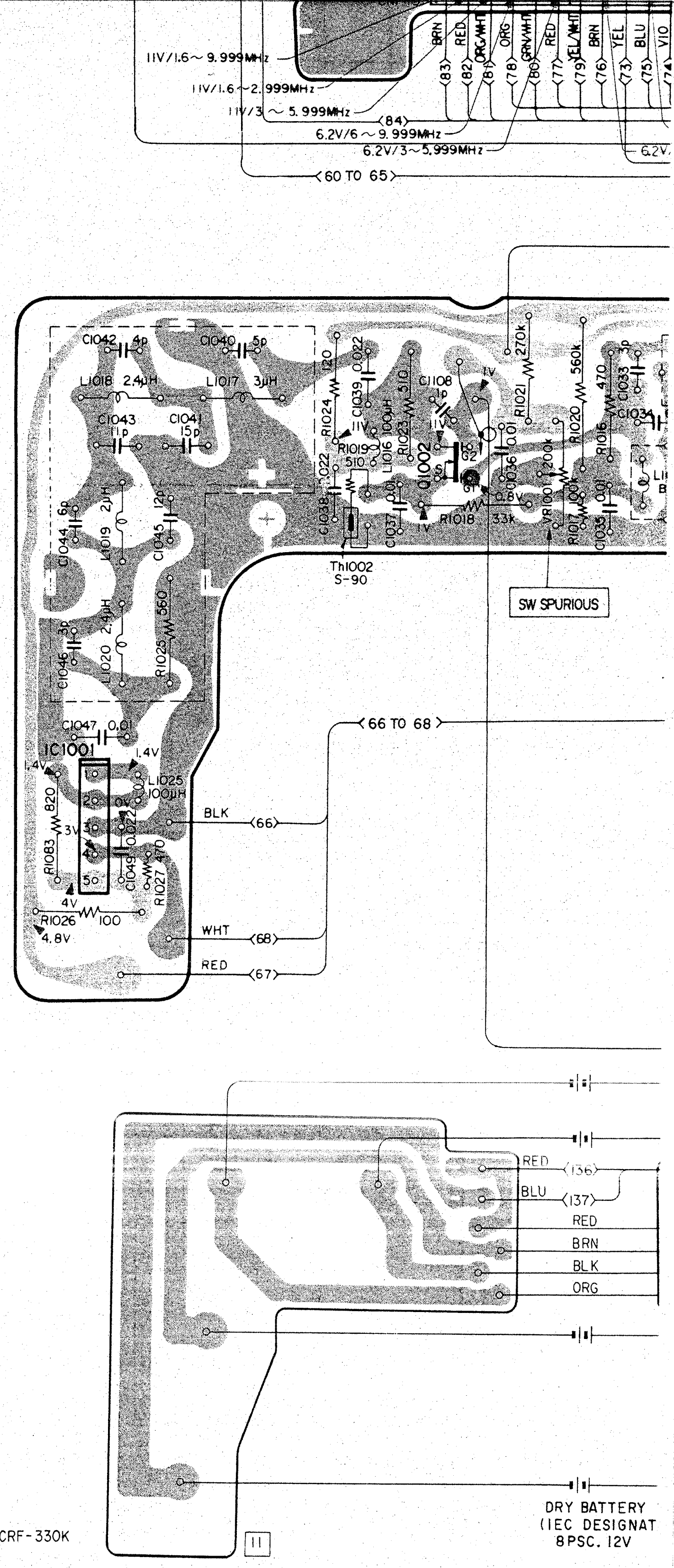
Note:

- Color code of sleeving over the end of the jacket.


WHT
RED
(RED)(GRY)

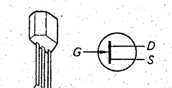
- ▨ : B+ pattern
- —◂— : signal path


D
CNP8
CNP7
LED1201
LED1202
LED1203
LED1204
R1265 820
R1264 820
R1266 820
0V
0.2V
[COUNTER BOARD (B)]
<16 TO 23>
S29 0~9MHz
S29-1,2
S28 0~9MHz
S28-1,2
S28-3,4
S27 0~9MHz
S27-1,2
S26~29 SW BAND SELECTOR
S26 10MHz (0/10/20MHz)
VOLTAGE INDICATIO MAY BE LOST WHEN A TEST LEAD IS TOU TO THE PIN. IN SU A CASE, TURN POW SWITCH OFF AND
6.2V/15~19.999MHz
6.2V/10~14.999MHz
6.2V/20~29.999MHz
11V/1~4.999MHz
6.2V/1.6~9.999MHz
<60 TO 65>
R1263 47k
R1262 47k
R1261 47k
Q1212
Q1211
Q1210
CNP19
11V/1.6~9.999MHz
11V/1.6~2.999MHz
11V/3~5.999MHz
6.2V/6~9.999MHz
6.2V/3~5.999MHz
C1042 4p
C1040 5p
L1018 2.4μH
L1017 3μH
C1043 11p
C1041 15p
R1024 120
C1039 0.022
R1019 510
Q1002
C1108
R1021 270k
R1020 560k
R1018 33k
Th1002 S-90
SW SPURIOUS
C1044 6p
L1019 2μH
C1045 12p
C1046 5p
L1020 2.4μH
R1025 560
C1047 0.01
IC1001
<66 TO 68>

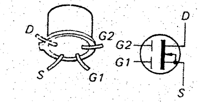

5
6
7
9
11V/1.6～9.999MHz
11V/1.6～2.999MHz
11V/3～5.999MHz
6.2V/6～9.999MHz
6.2V/3～5.999MHz
(84)
60 TO 65
BRN
RED
ORG/WHT
ORG
GRN/WHT
RED
YEL/WHT
BRN
YEL
BLU
VIO
(83)
(82)
(81)
(78)
(80)
(77)
(79)
(76)
(73)
(75)
6.2V
C1042 4p
C1040 5p
L1018 2.4μH
L1017 3μH
C1043 11p
C1041 15p
C1044 6p
L1019 2μH
C1045 12p
C1046 3p
L1020 2.4μH
R1025 560
C1047 0.01
IC1001
1.4V
L1025 100μH
820
R1083
R1026 100
4.8V
4V
3V
0V
R1027 470
BLK
WHT
RED
(66)
(68)
(67)
66 TO 68
R1024 120
C1039 0.022
R1019 510
C1038 0.022
L1016 100μH
R1023 510
Q1002
C1108
C1037
R1018 33k
C1036
C1035
VR1001 200k
R1020 560k
R1021 270k
R1016 470
C1033
C1034
R1017
Th1002 S-90
SW SPURIOUS
RED
BLU
(136)
(137)
RED
BRN
BLK
ORG
DRY BATTERY
(IEC DESIGNAT
8PSC. 12V
CRF-330K
11

A B

Q001, 051 }
Q224, 901 } : 2SK42

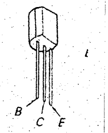


Q201, 204, 227 }
Q1001, 1002 } : 3SK37

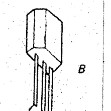

D
G2
S
G1
D
G2
G1
S

Q202, 203 }

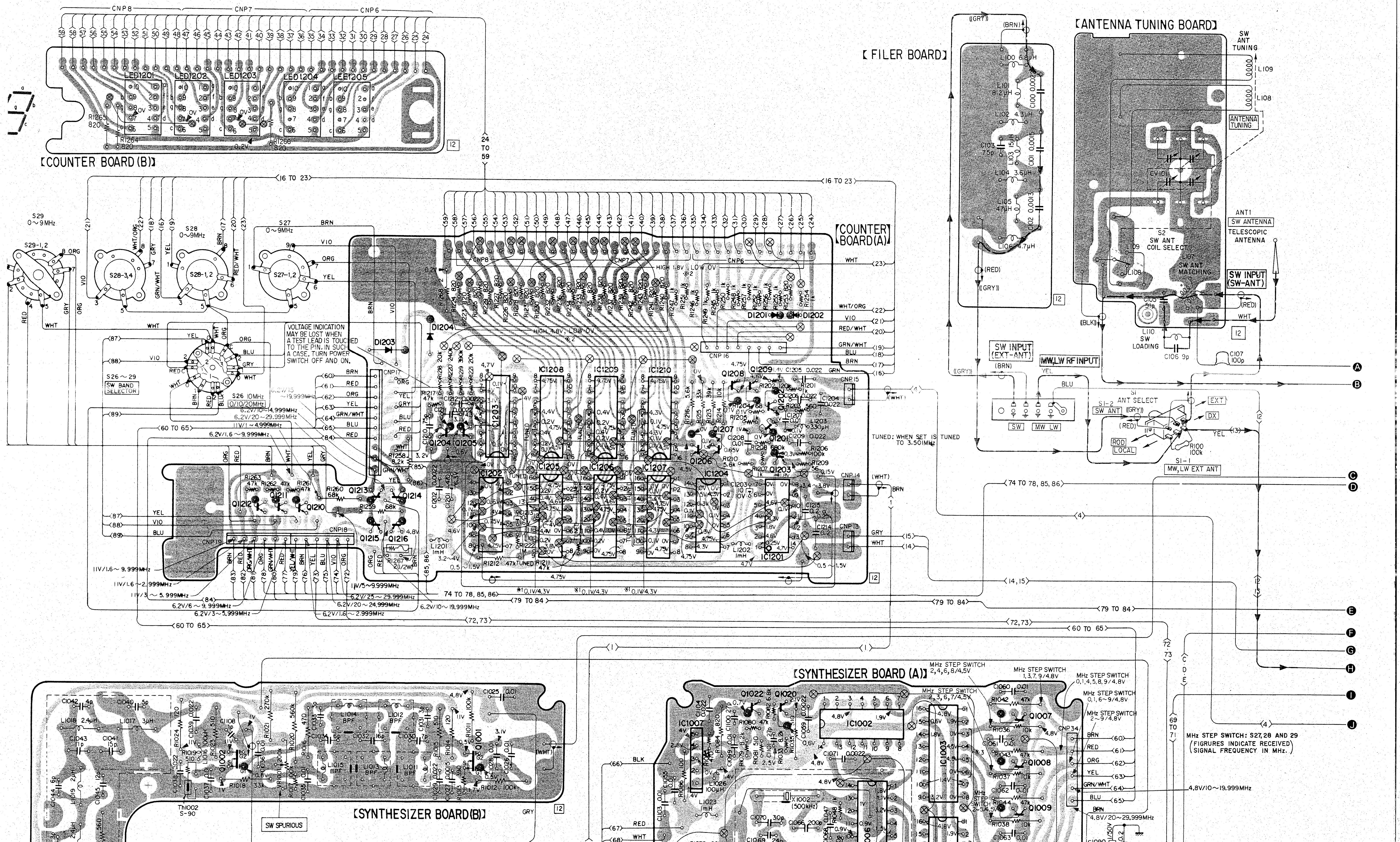
Q212: 2SC
Q003, 053
Q213, 214
Q1013－1
Q1022, 12
Q210, 211
Q801－80



Q1023, 10



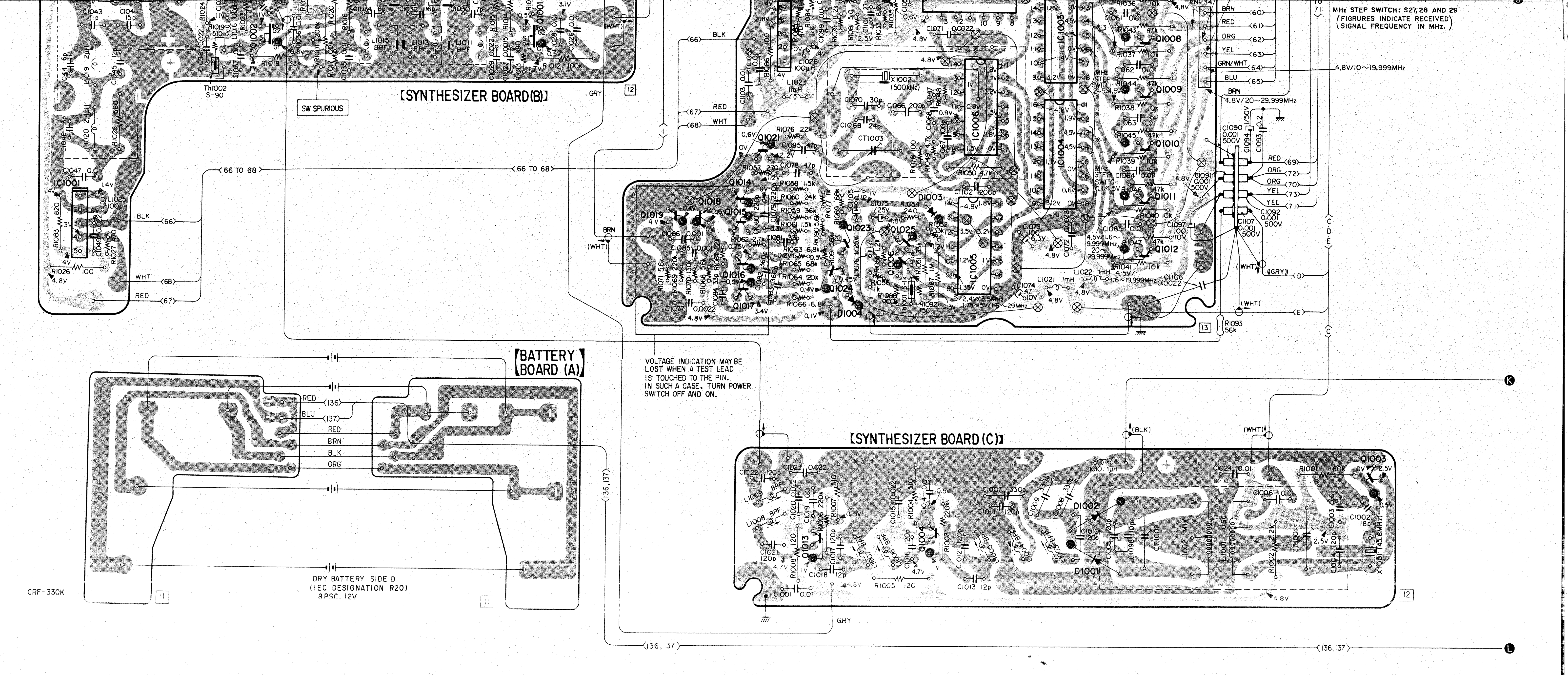
	A	B	C	D	E	F	G	H
Q IC	IC101	1212 1211 1210 1002	1213 1214 1215 1216 1001	IC1203 IC1202 IC1208 IC1205 IC1209 IC1206 1019 1018	IC1210 IC1207 1014,1016 1015,1017 1021,1206,1207,1208 1209 1202 1020 1022 IC1007,IC1204 1022 1201 IC1201 1025 1023 1205 1013,1024 1006	1004 IC1002 IC1006 IC1005 IC1003 IC1004	1007 1008 1009 1010 1011,1012	1003
D			1203 1204		1201 1202 1004	1003	1002 1001	


CNP8
CNP7
CNP6
LED1201
LED1202
LED1203
LED1204
LEE1205
R1265 820
R1264 820
R1266 820
【COUNTER BOARD(B)】
24 TO 59
〈16 TO 23〉
S29 0~9MHz
S28 0~9MHz
S27 0~9MHz
S29-1,2
S28-3,4
S28-1,2
S27-1,2
S26~29 SW BAND SELECTOR
S26 10MHz 0/10/20MHz
【COUNTER BOARD(A)】
【FILER BOARD】
L100 6.8μH
L101 8.2μH
L102 4.3μH
L103 15μH
L104 3.6μH
L105 47μH
L106 4.7μH
C103 75p
【ANTENNA TUNING BOARD】
SW ANT TUNING
L109
L108
ANTENNA TUNING
CV101
ANT1 SW ANTENNA
TELESCOPIC ANTENNA
S2 SW ANT COIL SELECT
L107 SW ANT MATCHING
SW INPUT (SW-ANT)
C105 51p
L110 SW LOADING
C106 9p
C107 100p
SW INPUT (EXT-ANT)
MW,LW RF INPUT
S1 ANT SELECT
S1-2 SW ANT
EXT
DX
ROD LOCAL
R100 100k
S1-1 MW,LW EXT ANT
IC1201
IC1202
IC1203
IC1204
IC1205
IC1206
IC1207
IC1208
IC1209
IC1210
Q1201
Q1202
Q1203
Q1204
Q1205
Q1206
Q1207
Q1208
Q1209
Q1210
Q1211
Q1212
Q1213
Q1214
Q1215
Q1216
D1201
D1202
D1203
D1204
CNP13
CNP14
CNP15
CNP16
CNP17
CNP18
CNP19
L1201 1mH
L1202 1mH
〈74 TO 78, 85, 86〉
〈79 TO 84〉
〈72,73〉
〈60 TO 65〉
〈14,15〉
A
B
C
D
E
F
G
H
I
J
【SYNTHESIZER BOARD (A)】
MHz STEP SWITCH 2,4,6,8/4.5V
MHz STEP SWITCH 1,3,7,9/4.8V
MHz STEP SWITCH 0,1,4,5,8,9/4.8V
MHz STEP SWITCH 0,1,6~9/4.8V
MHz STEP SWITCH 2~9/4.8V
MHz STEP SWITCH 2,3,5,6,7/4.5V
IC1002
IC1003
IC1007
Q1007
Q1008
Q1009
Q1020
Q1022
X1002 (500kHz)
L1023 1mH
CNP34
4.8V/10~19.999MHz
4.8V/20~29.999MHz
【SYNTHESIZER BOARD(B)】
L1018 2.4μH
L1017 3μH
L1014 BPF
L1012 BPF
L1015 BPF
L1013 BPF
L1011 BPF
Q1001
Q1002
Th1002 S-90
SW SPURIOUS

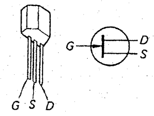
VOLTAGE INDICATION MAY BE LOST WHEN A TEST LEAD IS TOUCHED TO THE PIN. IN SUCH A CASE, TURN POWER SWITCH OFF AND ON.

TUNED: WHEN SET IS TUNED TO 3.501MHz

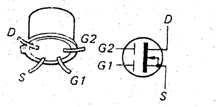
MHz STEP SWITCH: S27, 28 AND 29 (FIGURES INDICATE RECEIVED SIGNAL FREQUENCY IN MHz.)


[SYNTHESIZER BOARD(B)]
SW SPURIOUS
Th1002 S-90
IC1001
⟨66 TO 68⟩
BLK
WHT
RED
GRY
BRN
MHz STEP SWITCH: S27, 28 AND 29
(FIGRURES INDICATE RECEIVED SIGNAL FREQUENCY IN MHz.)
4.8V/10~19.999MHz
4.8V/20~29.999MHz
X1002 (500kHz)
IC1002
IC1003
IC1004
IC1005
IC1006
MHz STEP SWITCH 2.5/4.5V
MHz STEP SWITCH 0.1/4.5V
4.5V/1.6~9.999MHz, 20~29.999MHz
2.4V/3.5MHz 1.75~5V/1.6~29MHz
1.6~19.999MHz
【BATTERY BOARD (A)】
RED ⟨136⟩
BLU ⟨137⟩
RED
BRN
BLK
ORG
DRY BATTERY SIDE D
(IEC DESIGNATION R20)
8PSC. 12V
CRF-330K
VOLTAGE INDICATION MAY BE LOST WHEN A TEST LEAD IS TOUCHED TO THE PIN. IN SUCH A CASE, TURN POWER SWITCH OFF AND ON.
[SYNTHESIZER BOARD (C)]
MIX
OSC
X1001 (45.6MHz)
⟨136, 137⟩
K
L

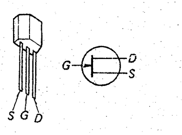
Q001, 051 }
Q224, 901 } : 2SK42



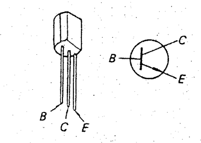
Q201, 204, 227 }
Q1001, 1002 } : 3SK37


D
G2
G2
G1
S
G1
D
S

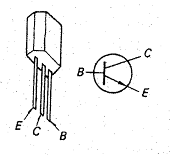
Q202, 203 }
Q052, 002 }
Q205, 206 } : 2SK23A-840
Q054: 2SK23A-860
Q902, 903 }
Q1025, 1201 } : 2SK23A-825
Q1006: 2SK23A-825



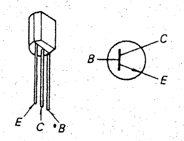
Q212: 2SC710-15
Q003, 053, 207–209 }
Q213, 214, 1003, 1004 }
Q1013–1018, 1021 }
Q1022, 1202, 1203 } : 2SC710
Q210, 211, 222 }
Q801–803 } : 2SC710-14



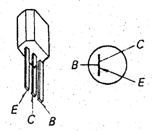
Q1023, 1024: 2SC634A



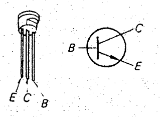
Q216, 218–221, 228, 230 }
Q501, 601, 604, 703–706 }
Q1007–1012 } : 2SC634A (2SC1363)
Q804, 806, 1204–1212: 2SC1364



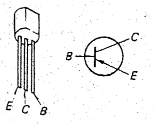
Q217, 231, 701 }
Q1213–1216 } : 2SA678



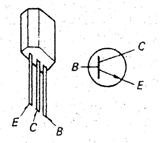
Q225, 226: 2SC1129



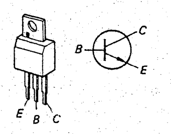
Q229, 702: 2SA684



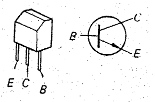
Q401: 2SC632A
Q1023, 1024: 2SC634A



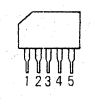
Q602, 603: 2SC1429-□5



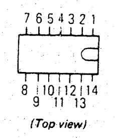
Q1019, 1020: 2SC641K



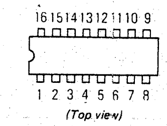
IC1001, 1007: TA7060P



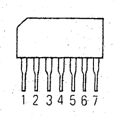
IC1002: SN74S113DC
IC1005: μPC1008C
IC1006: HD74LS00P
IC1202: MSM505
IC1204: MSM530


7 6 5 4 3 2 1
8 9 10 11 12 13 14
(Top view)

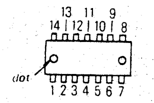
IC1003, 1004: SN74162N
IC1203: MSM551H
IC1205–1207: MSM5503
IC1208–1210: MSM561


16 15 14 13 12 11 10 9
1 2 3 4 5 6 7 8
(Top view)

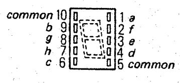
IC801, 802: CX075B



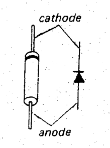
IC1201: 34013PC


13 11 9
14 12 10 8
dot
1 2 3 4 5 6 7
(Top view)

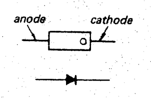
LED1201–1205: SL1122


common 10
b 9
g 8
h 7
c 6
1 a
2 f
3 e
4 d
5 common
(Rear view)

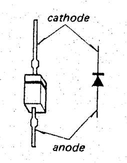
D001, 051: 1S2687S-2
D002, 003, 201–209 }
D211–215, 217–219 }
D223, 225, 237–241 }
D401, 803–807, 1003 }
D1004, 1201–1204 } : 1S1555
D216, 220, 221: 1T23S
D235, 801, 802 }
D1001, 1002 } : 1T261
D236: RD6A
D702: RD5A
D703, 704: 10E2


cathode
anode

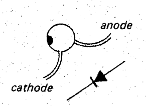
D226, 227: 1T18-0


anode
cathode

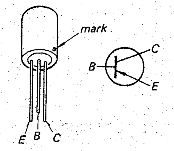
D228, 234: 1S2222


cathode
anode

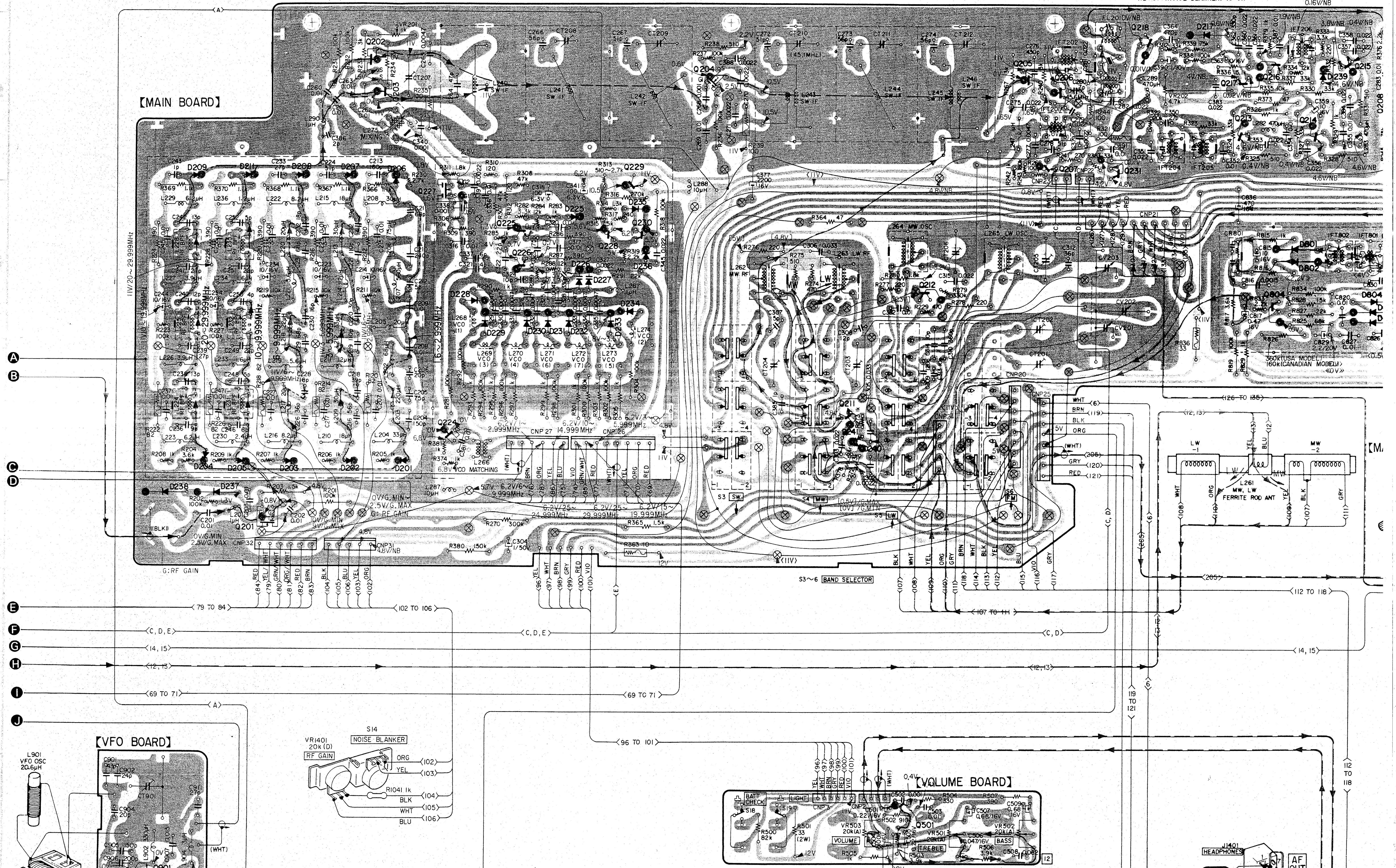
D601, 602: VD1120

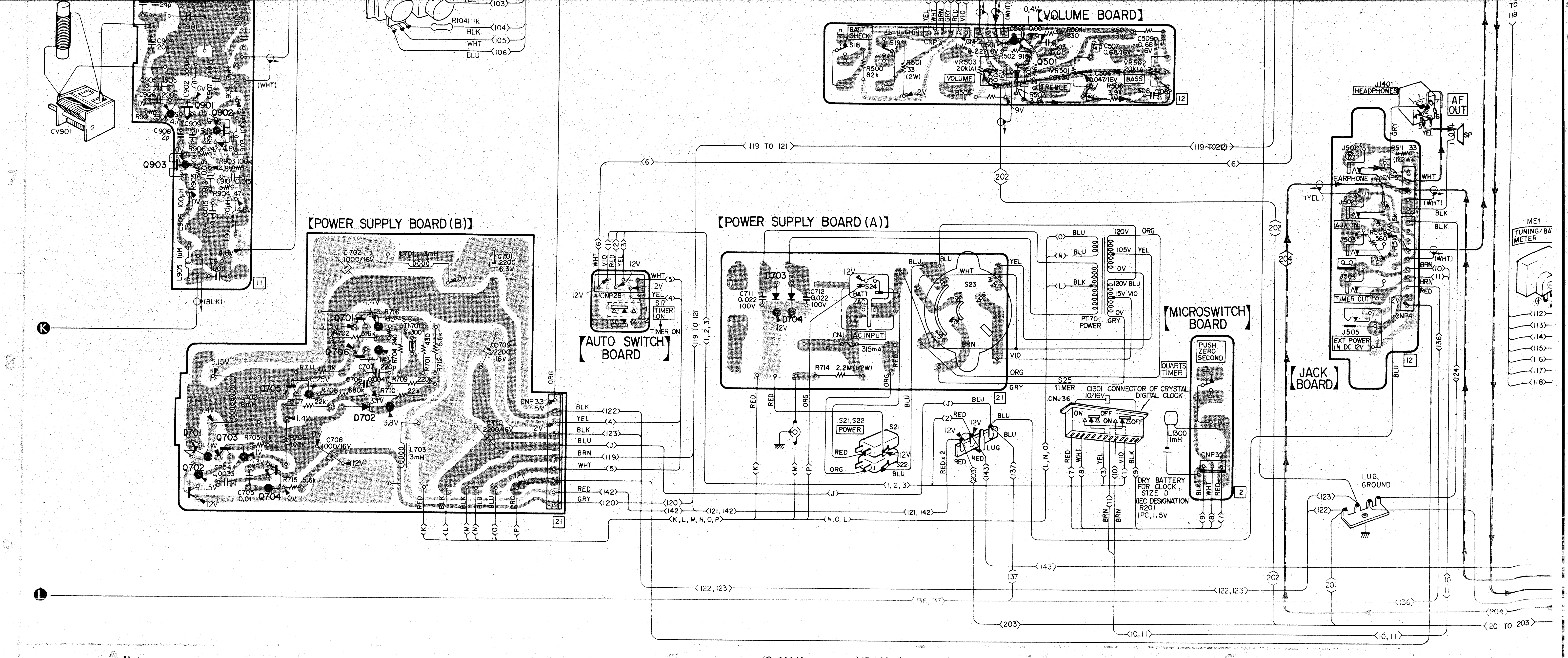

anode
cathode

D701: 2SB324


mark
B
C
E
E B C

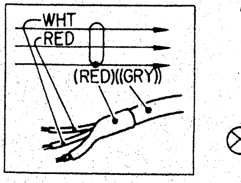
Q IC	901 903 902 703 702 704 705 201 202 701 706 203 227 224 225 226 228 229 230 204 211 212 501 205 206 207 231 218 217 213 216 804 214 215
D	701 238 209 204 237 211 205 208 203 702 207 202 206 201 228 229 230 231 225 226 227 232 233 235 234 236 703 704 241 240 217 801 802 239 804 807 806


NB: S14(NOISE BLANKER) IS ON
【MAIN BOARD】
G: RF GAIN
S3～6 BAND SELECTOR
L261 MW, LW FERRITE ROD ANT
360k(USA MODEL) 160k(CANADIAN MODEL)
A
B
C
D
E
F
G
H
I
J
【VFO BOARD】
L901 VFO OSC 20.6µH
VR1401 20k(D) RF GAIN
S14 NOISE BLANKER
【VOLUME BOARD】
VOLUME
TREBLE
BASS
BATT CHECK
LIGHT
J1401 HEADPHONES
AF OUT

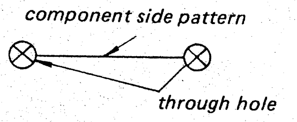

【POWER SUPPLY BOARD(B)】
【POWER SUPPLY BOARD(A)】
【VOLUME BOARD】
【AUTO SWITCH】 BOARD
【MICROSWITCH】 BOARD
【JACK】 BOARD
ME1 TUNING/BAND METER
J1401 HEADPHONES
AF OUT
SP
EARPHONE
AUX IN
TIMER OUT
EXT POWER IN DC 12V
BATT CHECK
LIGHT
VOLUME
TREBLE
BASS
PUSH ZERO SECOND
QUARTS TIMER
AC INPUT
POWER
S17 TIMER ON
S25 TIMER
C1301 CONNECTOR OF CRYSTAL DIGITAL CLOCK
DRY BATTERY FOR CLOCK, SIZE D (IEC DESIGNATION R20) 1PC, 1.5V
LUG, GROUND
PT701 POWER
CV901
Q903
K
L

Note:

- All capacitors are in μF unless otherwise noted. pF = μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼ W unless otherwise noted. kΩ = 1000 Ω, MΩ = 1000kΩ
- -ww- : fusible resistor.
- △ : internal component.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- Transistor base-emitter voltages are measured on the 2.5 V range.
- Transistor is used for D701.
- Color code of sleeving over the end of the jacket.


WHT
RED
(RED)((GRY))

- ▨ : B+ pattern
- —➤— : signal path


component side pattern
through hole

- ——— : B+ bus.

  – – – – : B+ bus when S3 (BAND SELECTOR, SW) is on.

  —·—·— : B+ bus at 3.501 MHz.

* Voltages are DC with respect to ground unless otherwise noted.

* Readings are taken under SW detuned conditions with a VOM (20 kΩ/V), setting VR501 (TREBLE) to minimum position, VR502 (BASS) to minimum position and VR503 (VOLUME) to mechanical mid position.

< >: FM1 .... S15 (AFC): ON, S16 (MUTING): OFF, tuning dial: minimum frequency
(( )) : FM2 .... S15 (AFC): ON, S16 (MUTING): OFF, tuning dial: minimum frequency
≪ ≫: FM .... S15 (AFC): OFF, S16 (MUTING): ON, tuning dial: minimum frequency
[ ] : LW .... VR1401 (RF GAIN): MAX/NORMAL, MODE: NORMAL, tuning dial: minimum frequency
( ) : MW .... VR1401 (RF GAIN): MAX/NORMAL, MODE: NORMAL, tuning dial: minimum frequency
/G MAX: .... VR1401 (RF GAIN): MAX/NORMAL
/G MIN: .... VR1401 (RF GAIN): MIN
/USB: .... S10 (MODE, USB-SSB): ON
/LSB: .... S11 (MODE, LSB-SSB): ON
/SSB: .... S10 (MODE, USB-SSB) or S11 (MODE, LSB-SSB): ON
/CW: .... S12 (CW): ON
/NB: .... S14 (NOISE BLANKER): ON
/□MHz: .... When □MHz signal is received.

- ※1 Relations of the LED indication (decimal value) and BCD (binary-coded decimal) value are as follows:

LED Indication	BCD code			
	A	B	C	D
0	0	0	0	0
1	1	0	0	0
2	0	1	0	0
3	1	1	0	0
4	0	0	1	0
5	1	0	1	0
6	0	1	1	0
7	1	1	1	0
8	0	0	0	1
9	1	0	0	1

0 : low level
1 : high level

- ※2 Relation of the LED indication (decimal value) and inputs to the LED are as follows:

LED Indication	LED Input Terminal						
	a	b	c	d	e	f	g
0	1	1	1	1	1	1	0
1	0	1	1	0	0	0	0
2	1	1	0	1	1	0	1
3	1	1	1	1	0	0	1
4	0	1	1	0	0	1	1
5	1	0	1	1	0	1	1
6	0	0	1	1	1	1	1
7	1	1	1	0	0	0	0
8	1	1	1	1	1	1	1
9	1	1	1	1	0	1	1

0 : low level
1 : high level

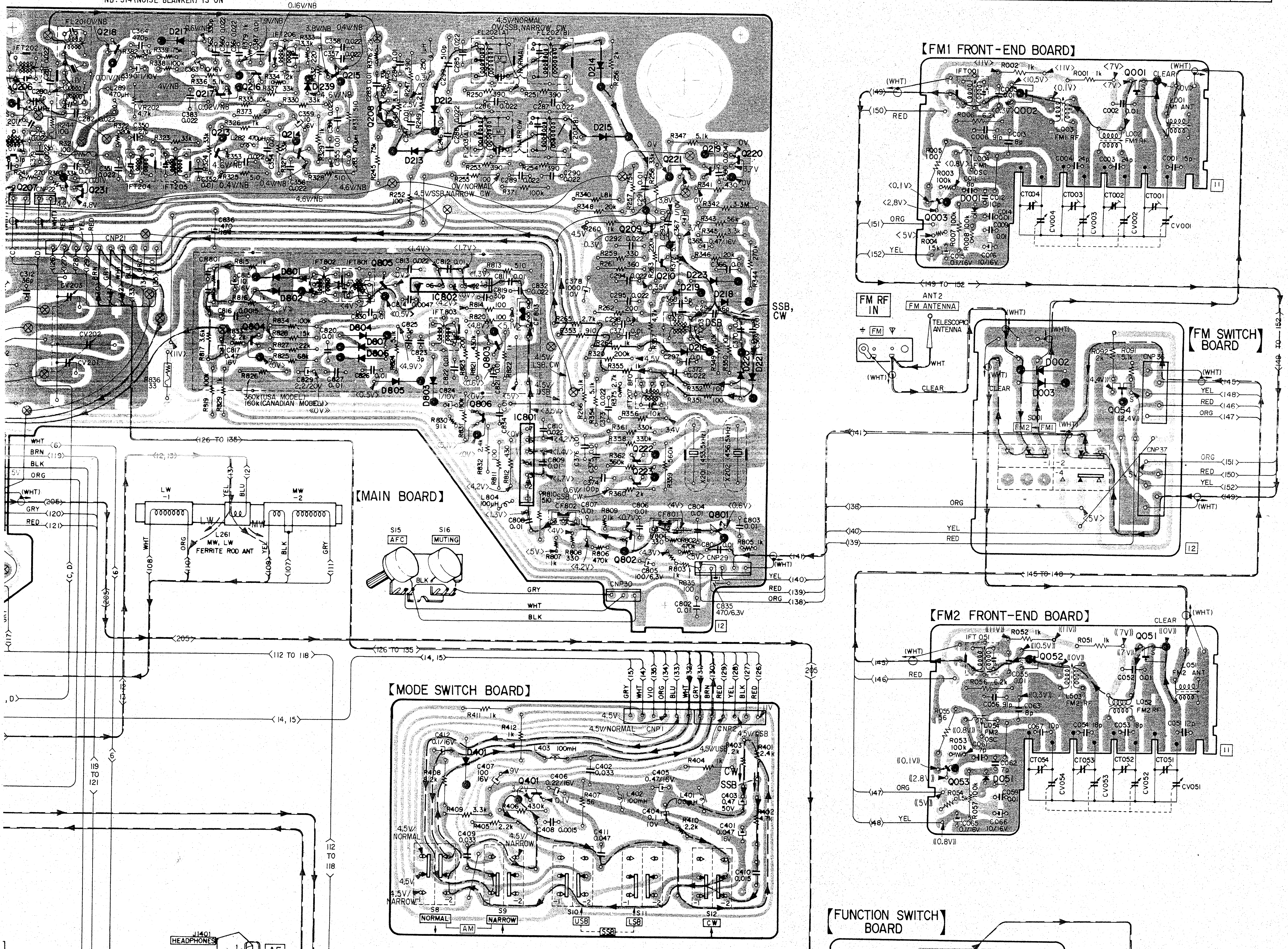
- ※3 0 : 0 V
  1 : 4.5 V

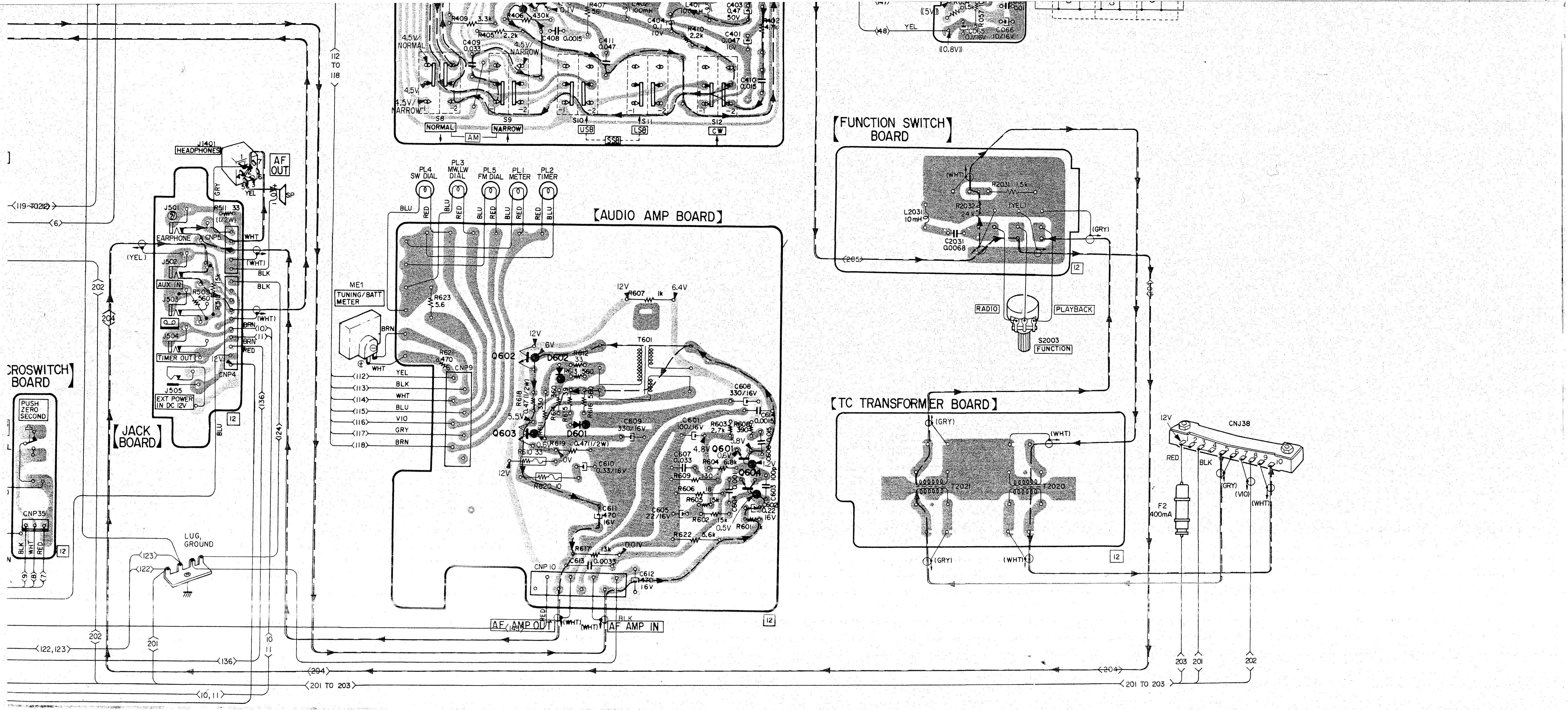
SW BAND	IC1	
	③	④
1 MHz BAND	1	1
2	0	1
3	1	0
4	0	0
5	1	1
6	0	1
7	1	0
8	0	0
9	1	0
10	0	0
11	1	1
12	0	1
13	1	0
14	0	0
15	1	1
16	0	1
17	1	0

G H J K M

206 07 231 218 217 213 216 804 214 215 208 805 IC802 806 803 IC801 401 602 603 209 222 223 802 210 221 219 801 220 601 604 003 053 002 052 054 001 051 Q IC

217 801 802 239 804 807 806 805 213 212 803 401 602 601 214 215 219 216 223 218 220 221 001 051 002 003 D


NB: S14 (NOISE BLANKER) IS ON
【MAIN BOARD】
SSB, CW
360k (USA MODEL) 160k (CANADIAN MODEL)
S15 AFC
S16 MUTING
LW -1
MW -2
L261 MW, LW FERRITE ROD ANT
【FM1 FRONT-END BOARD】
FM RF IN
ANT 2
FM ANTENNA
TELESCOPIC ANTENNA
【FM SWITCH BOARD】
【FM2 FRONT-END BOARD】
【MODE SWITCH BOARD】
S8 NORMAL AM
S9 NARROW
S10 USB
S11 LSB SSB
S12 CW
【FUNCTION SWITCH BOARD】
J1401 HEADPHONES



【FUNCTION SWITCH】 BOARD
【AUDIO AMP BOARD】
【TC TRANSFORMER BOARD】
【JACK BOARD】
CROSWITCH】 BOARD
PUSH ZERO SECOND
CNP35
J1401 HEADPHONES
AF OUT
SP
J501
J502
J503
J504
J505
EARPHONE
AUX IN
TIMER OUT
EXT POWER IN DC 12V
CNP4
CNP5
CNP9
CNP10
ME1 TUNING/BATT METER
PL4 SW DIAL
PL3 MW,LW DIAL
PL5 FM DIAL
PL1 METER
PL2 TIMER
S8 NORMAL
S9 NARROW
S10 USB
S11 LSB
S12 CW
AM
SSB
Q601
Q602
Q603
Q604
D601
D602
T601
LUG, GROUND
AF AMP OUT
AF AMP IN
S2003 FUNCTION
RADIO
PLAYBACK
L2031 10mH
R2031 1.5k
R2032 24k
C2031 0.0068
T2021
T2020
CNJ38
F2 400mA
12V
〈201 TO 203〉
〈204〉
〈136〉
〈10, 11〉
〈122, 123〉

indication (decimal value) and inputs
llows:

LED Input Terminal				
c	d	e	f	g
1	1	1	1	0
1	0	0	0	0
0	1	1	0	1
1	1	0	0	1
1	0	0	1	1
1	1	0	1	1
1	1	1	1	1
1	0	0	0	0
1	1	1	1	1
1	1	0	1	1

0 : low level
1 : high level

- ※3 0 : 0 V
  1 : 4.5 V

SW BAND	IC TERMINAL					
	IC1003				IC1004	
	③	④	⑤	⑥	③	④
1 MHz BAND	1	1	1	0	1	1
2	0	1	1	0	1	1
3	1	0	1	0	1	1
4	0	0	1	0	1	1
5	1	1	0	0	1	1
6	0	1	0	0	1	1
7	1	0	0	0	1	1
8	0	0	0	0	1	1
9	1	0	0	1	0	1
10	0	0	0	1	0	1
11	1	1	1	0	0	1
12	0	1	1	0	0	1
13	1	0	1	0	0	1
14	0	0	1	0	0	1
15	1	1	0	0	0	1
16	0	1	0	0	0	1
17	1	0	0	0	0	1

SW BAND	IC TERMINAL					
	IC1003				IC1004	
	③	④	⑤	⑥	③	④
18 MHz BAND	0	0	0	0	0	1
19	1	0	0	1	1	0
20	0	0	0	1	1	0
21	1	1	1	0	1	0
22	0	1	1	0	1	0
23	1	0	1	0	1	0
24	0	0	1	0	1	0
25	1	1	0	0	1	0
26	0	1	0	0	1	0
27	1	0	0	0	1	0
28	0	0	0	0	1	0
29	1	0	0	1	0	0

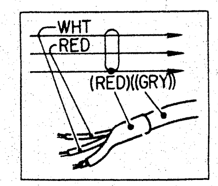
- Switch

Ref. No.	Switch	Position
S001	FM FM1 – FM2	FM1
S1-1	ANT SELECT MW, LW-EXT ANT	LOCAL
S1-2	ANT SELECT SW-ANT ROD-EXT	ROD
S2	SW ANT COIL SELECT L108-L109	L108
S3-1 – 3-6	BAND SELECTOR, SW	ON
S4-1 – 4-6	BAND SELECTOR, MW	OFF
S5-1 – 5-6	BAND SELECTOR, LW	OFF
S6-1 – 6-4	BAND SELECTOR, FM	OFF
S8	MODE, NORMAL	ON
S9	MODE, NARROW	OFF
S10	MODE, USB-SSB	OFF
S11	MODE, LSB-SSB	OFF
S12	MODE, CW	OFF
S14	NOISE BLANKER	OFF
S15	AFC	OFF
S16	MUTING	OFF
S17	TIMER ON	OFF
S18	BATT CHECK	OFF
S19	LIGHT	OFF
S20	ZERO SECOND	OFF

Ref. No.	Switch	Position
S21	POWER	OFF
S22	OFF-ON-TIMER ON	OFF
S23	VOLTAGE SELECT	100 V
S24	BATT/AC	BATT
S25	QUARTZ TIMER	OFF
S26	SW BAND SELECTOR 10 MHz STEP 0 – 10 MHz – 20	0
S27 to 29	SW BAND SELECTOR 1 MHz STEP 0 – 1MHz – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9	9
S2003	FUNCTION RADIO-PLAYBACK	RADIO

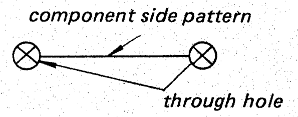
Note:

- All capacitors are in μF unless otherwise noted. pF = $\mu\mu$F 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ = 1000 Ω, MΩ = 1000 kΩ
- ⏛ : fusible resistor.
- △ : internal component.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- Transistor base-emitter voltages are measured on the 2.5 V range.
- Transistor is used for D701.
- Color code of sleeving over the end of the jacket.



WHT
RED
(RED)(GRY)

- ▨ : B+ pattern
- —▸— : signal path



component side pattern
through hole

- ——— : B+ bus.
  – – – – : B+ bus when S3 (BAND SELECTOR, SW) is on.
  —-— : B+ bus at 3.501 MHz.

* Voltages are DC with respect to ground unless otherwise noted.

* Readings are taken under SW detuned conditions with a VOM (20 kΩ/V), setting VR501 (TREBLE) to minimum position, VR502 (BASS) to minimum position and VR503 (VOLUME) to mechanical mid position.

< >: FM1	....	S15 (AFC): ON, S16 (MUTING): OFF, tuning dial: minimum frequency
(( )): FM2	....	S15 (AFC): ON, S16 (MUTING): OFF, tuning dial: minimum frequency
≪ ≫: FM	....	S15 (AFC): OFF, S16 (MUTING): ON, tuning dial: minimum frequency
[ ]: LW	....	VR1401 (RF GAIN): MAX/NORMAL, MODE: NORMAL, tuning dial: minimum frequency
( ): MW	....	VR1401 (RF GAIN): MAX/NORMAL, MODE: NORMAL, tuning dial: minimum frequency

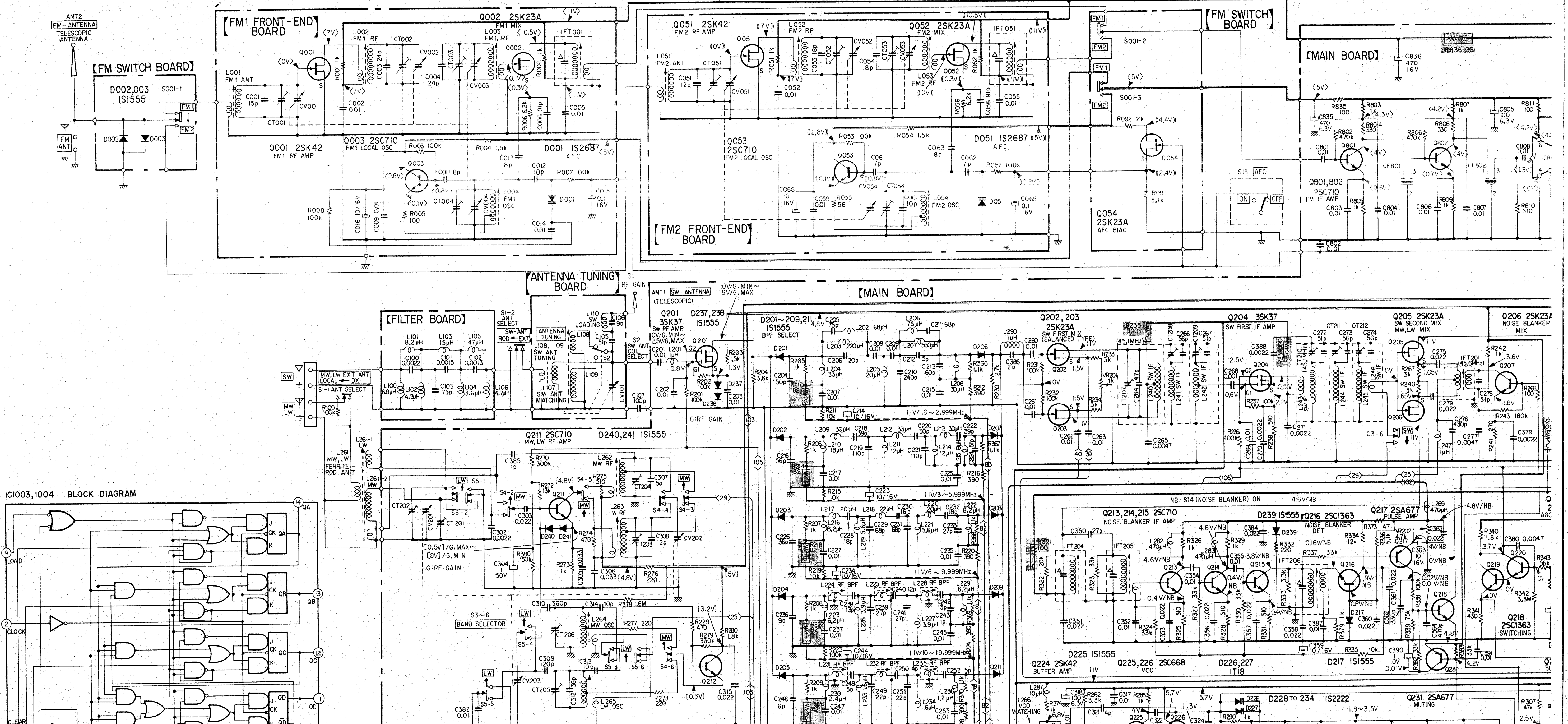
/G MAX:	....	VR1401 (RF GAIN): MAX/NORMA
/G MIN:	....	VR1401 (RF GAIN): MIN
/USB:	....	S10 (MODE, USB-SSB): ON
/LSB:	....	S11 (MODE, LSB-SSB): ON
/SSB:	....	S10 (MODE, USB-SSB) or S11 (MOD LSB-SSB): ON
/CW:	....	S12 (CW): ON
/NB:	....	S14 (NOISE BLANKER): ON
/□MHz:	....	When □MHz signal is received.

- ※1 Relations of the LED indication (decimal value) and (binary-coded decimal) value are as follows:

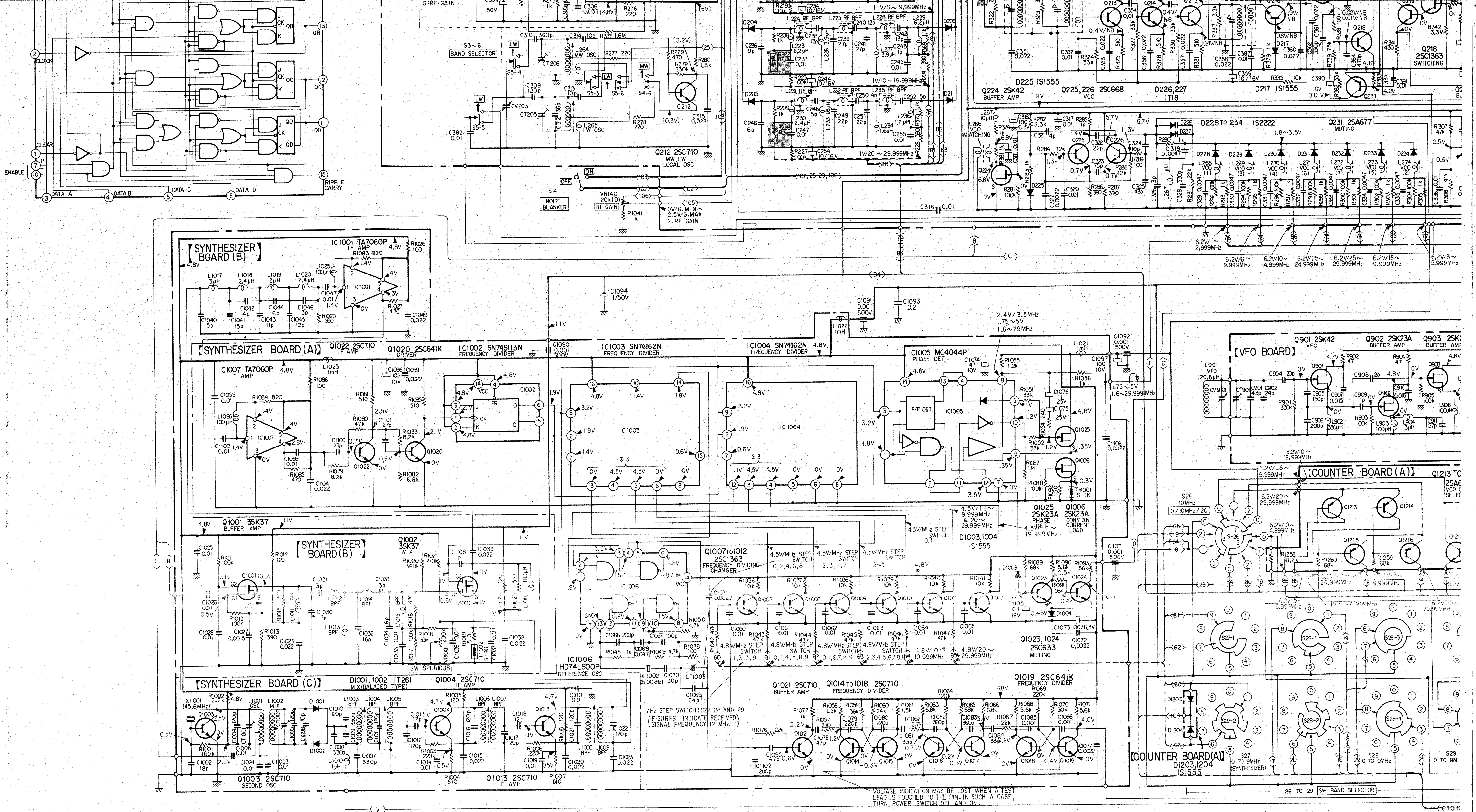
LED Indication	BCD code			
	A	B	C	D
0	0	0	0	0
1	1	0	0	0
2	0	1	0	0
3	1	1	0	0
4	0	0	1	0
5	1	0	1	0
6	0	1	1	0
7	1	1	1	0
8	0	0	0	1
9	1	0	0	1

0 : low level
1 : high level

4-2. SCHEMATIC DIAGRAM – Radio Section –



ANT2
FM-ANTENNA
TELESCOPIC ANTENNA
[FM SWITCH BOARD]
D002,003 1S1555
S001-1
FM ANT
[FM1 FRONT-END BOARD]
Q001 2SK42 FM1 RF AMP
Q002 2SK23A FM1 MIX
Q003 2SC710 FM1 LOCAL OSC
D001 1S2687 AFC
IFT001
[FM2 FRONT-END BOARD]
Q051 2SK42 FM2 RF AMP
Q052 2SK23A FM2 MIX
Q053 2SC710 FM2 LOCAL OSC
D051 1S2687 AFC
IFT051
[FM SWITCH BOARD]
S001-2
S001-3
Q054 2SK23A AFC BIAC
S15 AFC
ON OFF
[MAIN BOARD]
Q801,802 2SC710 FM IF AMP
CF801
CF802
[ANTENNA TUNING BOARD]
[FILTER BOARD]
S1-2 ANT SELECT
SW-ANT ROD-EXT
L108, 109 SW ANT TUNING
L107 SW ANT MATCHING
L110 SW LOADING
ANT1 SW-ANTENNA (TELESCOPIC)
Q201 3SK37 SW RF AMP
D237,238 1S1555
D201~209,211 1S1555 BPF SELECT
Q202,203 2SK23A SW FIRST MIX (BALANCED TYPE)
Q204 3SK37 SW FIRST IF AMP
Q205 2SK23A SW SECOND MIX MW,LW MIX
Q206 2SK23A NOISE BLANKER MIX
Q211 2SC710 MW,LW RF AMP
D240,241 1S1555
L261 MW,LW FERRITE-ROD ANT
MW,LW EXT ANT
LOCAL DX
S1-1 ANT SELECT
S3~6 BAND SELECTOR
Q212
G:RF GAIN
IC1003,1004 BLOCK DIAGRAM
LOAD
CLOCK
CLEAR
QA
QB
QC
QD
NB: S14 (NOISE BLANKER) ON
Q213,214,215 2SC710 NOISE BLANKER IF AMP
D239 1S1555
Q216 2SC1363 NOISE BLANKER DET
Q217 2SA677 PULSE AMP
Q218 2SC1363 SWITCHING
Q224 2SK42 BUFFER AMP
D225 1S1555
Q225,226 2SC668 VCO
D226,227 1T18
D217 1S1555
D228 TO 234 1S2222
Q231 2SA677 MUTING



【SYNTHESIZER BOARD (B)】
IC1001 TA7060P IF AMP
【SYNTHESIZER BOARD (A)】
IC1007 TA7060P IF AMP
Q1022 2SC710 IF AMP
Q1020 2SC641K DRIVER
IC1002 SN74S113N FREQUENCY DIVIDER
IC1003 SN74162N FREQUENCY DIVIDER
IC1004 SN74162N FREQUENCY DIVIDER
IC1005 MC4044P PHASE DET
Q1001 3SK37 BUFFER AMP
Q1002 3SK37 MIX
SW SPURIOUS
IC1006 HD74LS00P REFERENCE OSC
Q1007 TO 1012 2SC1363 FREQUENCY DIVIDING CHANGER
Q1025 2SK23A PHASE DET
Q1006 2SK23A CONSTANT CURRENT LOAD
D1003,1004 1S1555
Q1023,1024 2SC633 MUTING
【SYNTHESIZER BOARD (C)】
D1001,1002 1T261 MIX(BALACED TYPE)
Q1004 2SC710 IF AMP
Q1003 2SC710 SECOND OSC
Q1013 2SC710 IF AMP
Q1021 2SC710 BUFFER AMP
Q1014 TO 1018 2SC710 FREQUENCY DIVIDER
Q1019 2SC641K FREQUENCY DIVIDER
【VFO BOARD】
Q901 2SK42 VFO
Q902 2SK23A BUFFER AMP
Q903 2SK2
【COUNTER BOARD (A)】
【COUNTER BOARD(A)】 D1203,1204 1S1555
S26 10MHz
S27 0 TO 9MHz (SYNTHESIZER)
S28 0 TO 9MHz
S29 0 TO 9MH
26 TO 29 SW BAND SELECTOR
S3~6 BAND SELECTOR
Q212 2SC710 MW,LW LOCAL OSC
S14 NOISE BLANKER
VR1401 20k(D) RF GAIN
Q224 2SK42 BUFFER AMP
Q225,226 2SC668 VCO
D225 1S1555
D226,227 1T18
D217 1S1555
Q218 2SC1363 SWITCHING
Q231 2SA677 MUTING
D228 TO 234 1S2222
CLOCK
CLEAR
ENABLE
DATA A
DATA B
DATA C
DATA D
RIPPLE CARRY

MHz STEP SWITCH: S27, 28 AND 29 (FIGURES INDICATE RECEIVED SIGNAL FREQUENCY IN MHz)

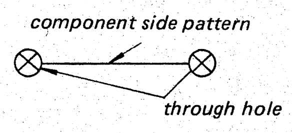
VOLTAGE INDICATION MAY BE LOST WHEN A TEST LEAD IS TOUCHED TO THE PIN. IN SUCH A CASE, TURN POWER SWITCH OFF AND ON.

are in μF unless otherwise noted. pF = μμF
are not indicated except for electrolytics.
re in ohms, ¼ W unless otherwise noted.
MΩ = 1000 kΩ
e resistor.
al component.
designation.
ment for repair.
e-emitter voltages are measured on the 2.5 V

sed for D701.

sleeving over the end of the jacket.

- ▨ : B+ pattern
- —►—: signal path


component side pattern
through hole

- ——— : B+ bus.
  - – – – : B+ bus when S3 (BAND SELECTOR, SW) is on.
  - —-—: B+ bus at 3.501 MHz.

* Voltages are DC with respect to ground unless otherwise noted.

* Readings are taken under SW detuned conditions with a VOM (20 kΩ/V), setting VR501 (TREBLE) to minimum position, VR502 (BASS) to minimum position and VR503 (VOLUME) to mechanical mid position.

< >: FM1	....	S15 (AFC): ON, S16 (MUTING): OFF, tuning dial: minimum frequency
(( )): FM2	....	S15 (AFC): ON, S16 (MUTING): OFF, tuning dial: minimum frequency
≪ ≫: FM	....	S15 (AFC): OFF, S16 (MUTING): ON, tuning dial: minimum frequency
[ ]: LW	....	VR1401 (RF GAIN): MAX/NORMAL, MODE: NORMAL, tuning dial: minimum frequency
( ): MW	....	VR1401 (RF GAIN): MAX/NORMAL, MODE: NORMAL, tuning dial: minimum frequency
/G MAX:	.....	VR1401 (RF GAIN): MAX/NORMAL
/G MIN:	....	VR1401 (RF GAIN): MIN
/USB:	....	S10 (MODE, USB-SSB): ON
/LSB:	....	S11 (MODE, LSB-SSB): ON
/SSB:	....	S10 (MODE, USB-SSB) or S11 (MODE, LSB-SSB): ON
/CW:	....	S12 (CW): ON
/NB:	....	S14 (NOISE BLANKER): ON
/□MHz:	....	When □MHz signal is received.

- ※1 Relations of the LED indication (decimal value) and BCD (binary-coded decimal) value are as follows:

LED Indication	BCD code			
	A	B	C	D
0	0	0	0	0
1	1	0	0	0
2	0	1	0	0
3	1	1	0	0
4	0	0	1	0
5	1	0	1	0
6	0	1	1	0
7	1	1	1	0
8	0	0	0	1
9	1	0	0	1

0 : low level
1 : high level

- ※2 Relation of the LED indication (decimal value) and inputs to the LED are as follows:

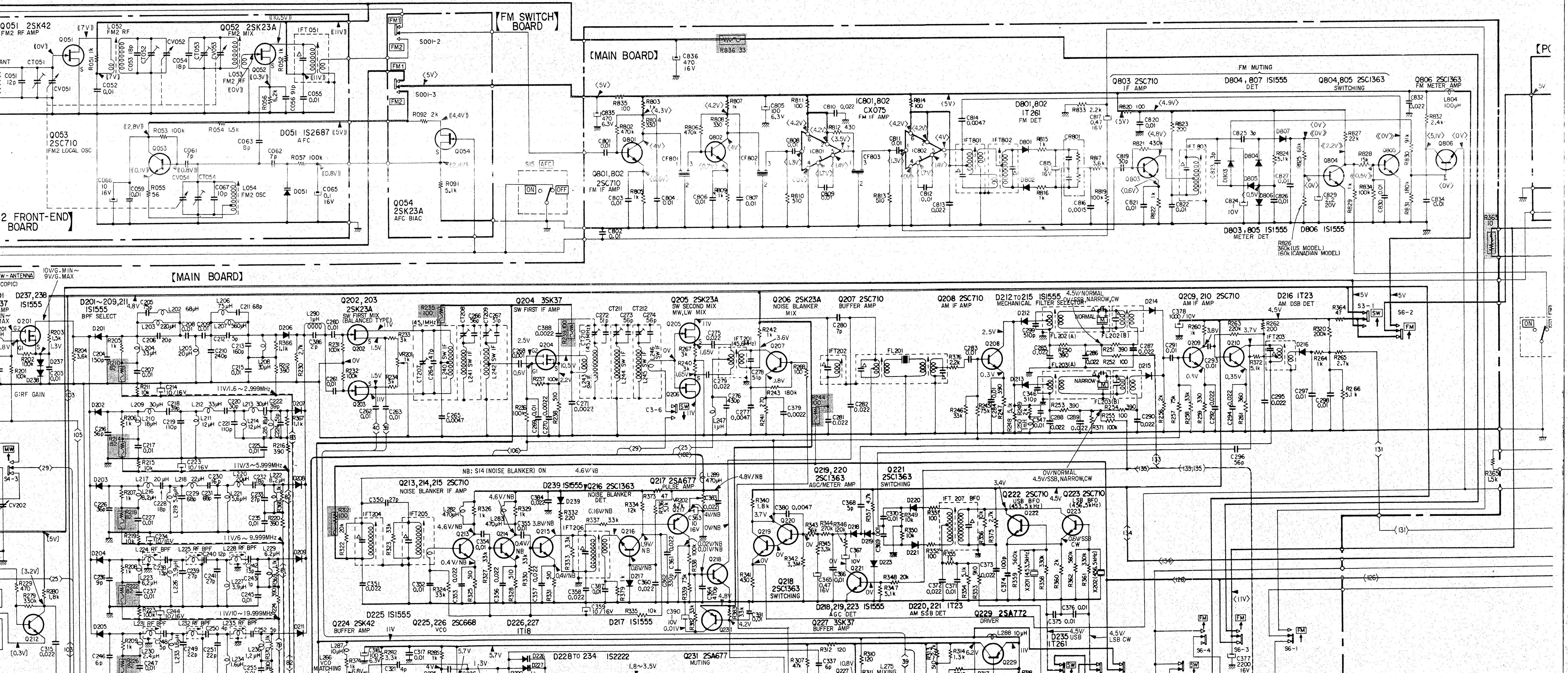
LED Indication	LED Input Terminal						
	a	b	c	d	e	f	g
0	1	1	1	1	1	1	0
1	0	1	1	0	0	0	0
2	1	1	0	1	1	0	1
3	1	1	1	1	0	0	1
4	0	1	1	0	0	1	1
5	1	0	1	1	0	1	1
6	0	0	1	1	1	1	1
7	1	1	1	0	0	0	0
8	1	1	1	1	1	1	1
9	1	1	1	1	0	1	1

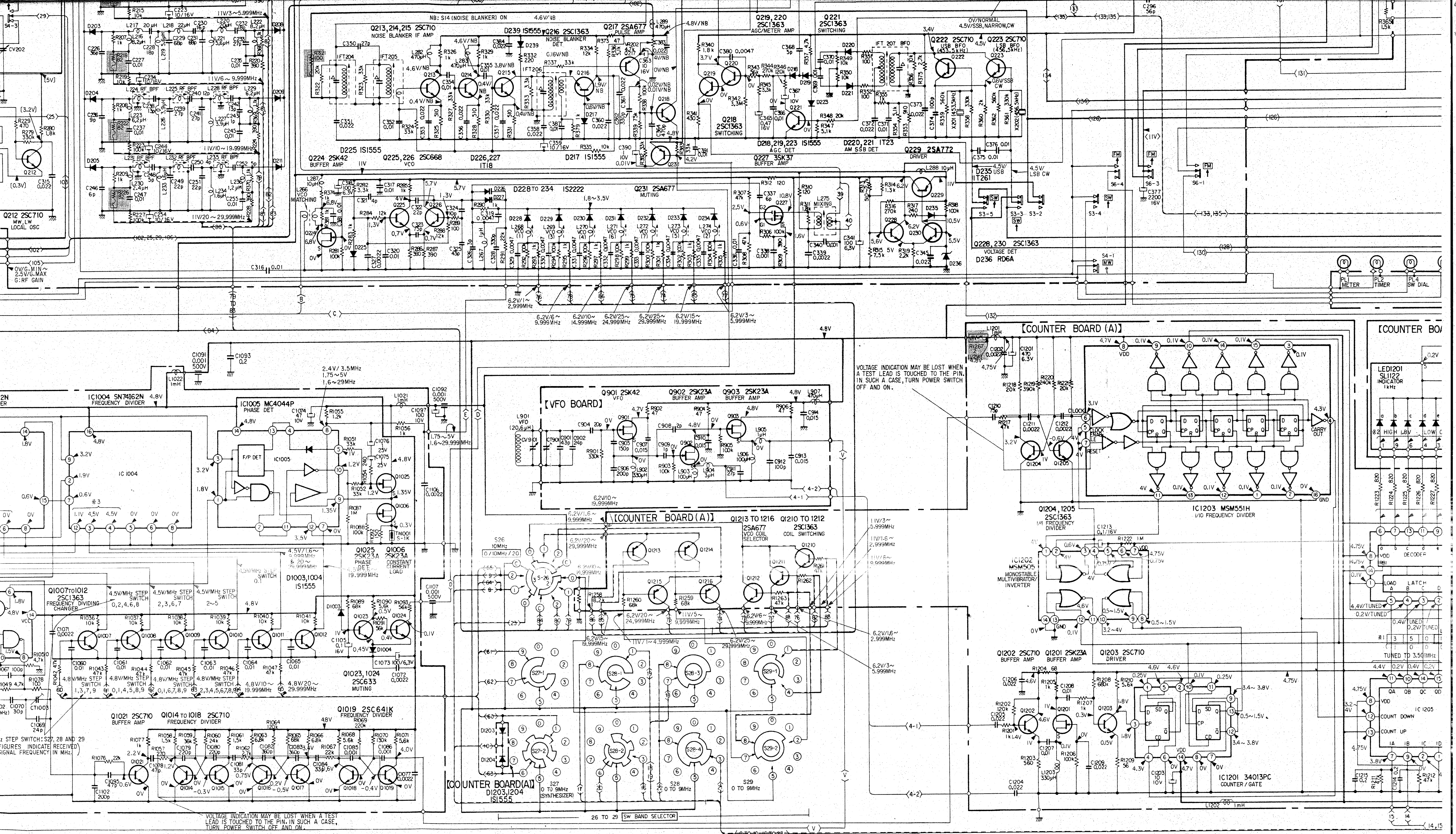
0 : low level
1 : high level

- ※3 0 : 0 V
  1 : 4.5 V

SW BAND	IC TERMINAL					
	IC1003				IC1004	
	③	④	⑤	⑥	③	④
1 MHz BAND	1	1	1	0	1	1
2	0	1	1	0	1	1
3	1	0	1	0	1	1
4	0	0	1	0	1	1
5	1	1	0	0	1	1
6	0	1	0	0	1	1
7	1	0	0	0	1	1
8	0	0	0	0	1	1
9	1	0	0	1	0	1
10	0	0	0	1	0	1
11	1	1	1	0	0	1
12	0	1	1	0	0	1
13	1	0	1	0	0	1
14	0	0	1	0	0	1
15	1	1	0	0	0	1
16	0	1	0	0	0	1
17	1	0	0	0	0	1

SW BAND
18 MHz B
19
20
21
22
23
24
25
26
27
28
29


E
F
G
H
I
J
K
[FM SWITCH] BOARD
S001-2
S001-3
[MAIN BOARD]
2 FRONT-END] BOARD
Q051 2SK42 FM2 RF AMP
Q052 2SK23A FM2 MIX
IFT051
Q053 2SC710 FM2 LOCAL OSC
D051 1S2687 AFC
Q054 2SK23A AFC BIAC
S15 [AFC] ON OFF
Q801,802 2SC710 FM IF AMP
IC801,802 CX075 FM IF AMP
D801,802 1T261 FM DET
Q803 2SC710 IF AMP
FM MUTING
D804, 807 1S1555 DET
Q804,805 2SC1363 SWITCHING
Q806 2SC1363 FM METER AMP
D803, 805 1S1555 METER DET
D806 1S1555
R826 360k (US MODEL) 160k (CANADIAN MODEL)
[MAIN BOARD]
D201~209,211 1S1555 BPF SELECT
D237,238 1S1555
Q201
Q202,203 2SK23A SW FIRST MIX (BALANCED TYPE)
Q204 3SK37 SW FIRST IF AMP
Q205 2SK23A SW SECOND MIX MW,LW MIX
Q206 2SK23A NOISE BLANKER MIX
Q207 2SC710 BUFFER AMP
Q208 2SC710 AM IF AMP
D212 TO 215 1S1555 MECHANICAL FILTER SELECTOR
Q209, 210 2SC710 AM IF AMP
D216 1T23 AM DSB DET
FL201
FL202(A)
FL202(B)
FL203(A)
FL203(B)
NORMAL
NARROW
S3-1
S6-2
11V/1.6~2.999MHz
11V/3~5.999MHz
11V/6~9.999MHz
11V/10~19.999MHz
NB: S14 (NOISE BLANKER) ON
Q213,214,215 2SC710 NOISE BLANKER IF AMP
D239 1S1555
Q216 2SC1363 NOISE BLANKER DET
Q217 2SA677 PULSE AMP
Q219,220 2SC1363 AGC/METER AMP
Q221 2SC1363 SWITCHING
Q222 2SC710 USB BFO (453.5kHz)
Q223 2SC710 LSB BFO (456.5kHz)
Q218 2SC1363 SWITCHING
D218,219,223 1S1555 AGC DET
D220,221 1T23 AM SSB DET
Q227 3SK37 BUFFER AMP
Q229 2SA772 DRIVER
D235 USB 1T261
Q224 2SK42 BUFFER AMP
Q225,226 2SC668 VCO
D226,227 1T18
D225 1S1555
D217 1S1555
D228 TO 234 1S2222
Q231 2SA677 MUTING
S6-4
S6-3
S6-1


NB: S14 (NOISE BLANKER) ON
Q213,214,215 2SC710 NOISE BLANKER IF AMP
D239 IS1555
Q216 2SC1363 NOISE BLANKER DET
Q217 2SA677 PULSE AMP
Q219,220 2SC1363 AGC/METER AMP
Q221 2SC1363 SWITCHING
Q222 2SC710 USB BFO (453.5kHz)
Q223 2SC710 LSB BFO (456.5kHz)
0V/NORMAL 4.5V/SSB,NARROW,CW
Q218 2SC1363 SWITCHING
D218,219,223 IS1555 AGC DET
D220,221 IT23 AM SSB DET
Q212 2SC710 MW,LW LOCAL OSC
Q224 2SK42 BUFFER AMP
Q225,226 2SC668 VCO
D226,227 IT18
D217 IS1555
Q227 3SK37 BUFFER AMP
Q229 2SA772 DRIVER
D235 USB IT261
D228 TO 234 IS2222
Q231 2SA677 MUTING
L275 MIXING
Q228,230 2SC1363 VOLTAGE DET
D236 RD6A
PL1 METER
PL2 TIMER
PL4 SW DIAL
IC1004 SN74162N FREQUENCY DIVIDER
IC1005 MC4044P PHASE DET
F/P DET
Q1025 2SK23A PHASE DET
Q1006 2SK23A CONSTANT CURRENT LOAD
D1003,1004 IS1555
Q1007 TO 1012 2SC1363 FREQUENCY DIVIDING CHANGER
Q1023,1024 2SC633 MUTING
Q1021 2SC710 BUFFER AMP
Q1014 TO 1018 2SC710 FREQUENCY DIVIDER
Q1019 2SC641K FREQUENCY DIVIDER
STEP SWITCH: S27, 28 AND 29 FIGURES INDICATE RECEIVED SIGNAL FREQUENCY IN MHz
VOLTAGE INDICATION MAY BE LOST WHEN A TEST LEAD IS TOUCHED TO THE PIN. IN SUCH A CASE, TURN POWER SWITCH OFF AND ON.
[VFO BOARD]
Q901 2SK42 VFO
Q902 2SK23A BUFFER AMP
Q903 2SK23A BUFFER AMP
[COUNTER BOARD(A)]
Q1213 TO 1216 2SA677 VCO COIL SELECTOR
Q1210 TO 1212 2SC1363 COIL SWITCHING
S26 10MHz
S27 0 TO 9MHz (SYNTHESIZER)
S28 0 TO 9MHz
S29 0 TO 9MHz
D1203,1204 IS1555
26 TO 29 SW BAND SELECTOR
VOLTAGE INDICATION MAY BE LOST WHEN A TEST LEAD IS TOUCHED TO THE PIN. IN SUCH A CASE, TURN POWER SWITCH OFF AND ON.
[COUNTER BOARD (A)]
IC1203 MSM551H 1/10 FREQUENCY DIVIDER
Q1204,1205 2SC1363 1/4 FREQUENCY DIVIDER
IC1202 MSM505 MONOSTABLE MULTIVIBRATOR/ INVERTER
Q1202 2SC710 BUFFER AMP
Q1201 2SK23A BUFFER AMP
Q1203 2SC710 DRIVER
IC1201 34013PC COUNTER / GATE
LED1201 SL1122 INDICATOR 1kHz
DECODER
LATCH
IC1205
COUNT DOWN
COUNT UP
CARRY OUT
TUNED TO 3.501MHz
S6-1 S6-3 S6-4 FM
S3-2 S3-3 S3-4 S3-5 SW
S4-1 MW

MAL

IODE,

ıd BCD

- ※2 Relation of the LED indication (decimal value) and inputs to the LED are as follows:

LED Indication	LED Input Terminal						
	a	b	c	d	e	f	g
0	1	1	1	1	1	1	0
1	0	1	1	0	0	0	0
2	1	1	0	1	1	0	1
3	1	1	1	1	0	0	1
4	0	1	1	0	0	1	1
5	1	0	1	1	0	1	1
6	0	0	1	1	1	1	1
7	1	1	1	0	0	0	0
8	1	1	1	1	1	1	1
9	1	1	1	1	0	1	1
	0 : low level 1 : high level						

- ※3 0 : 0 V
  1 : 4.5 V

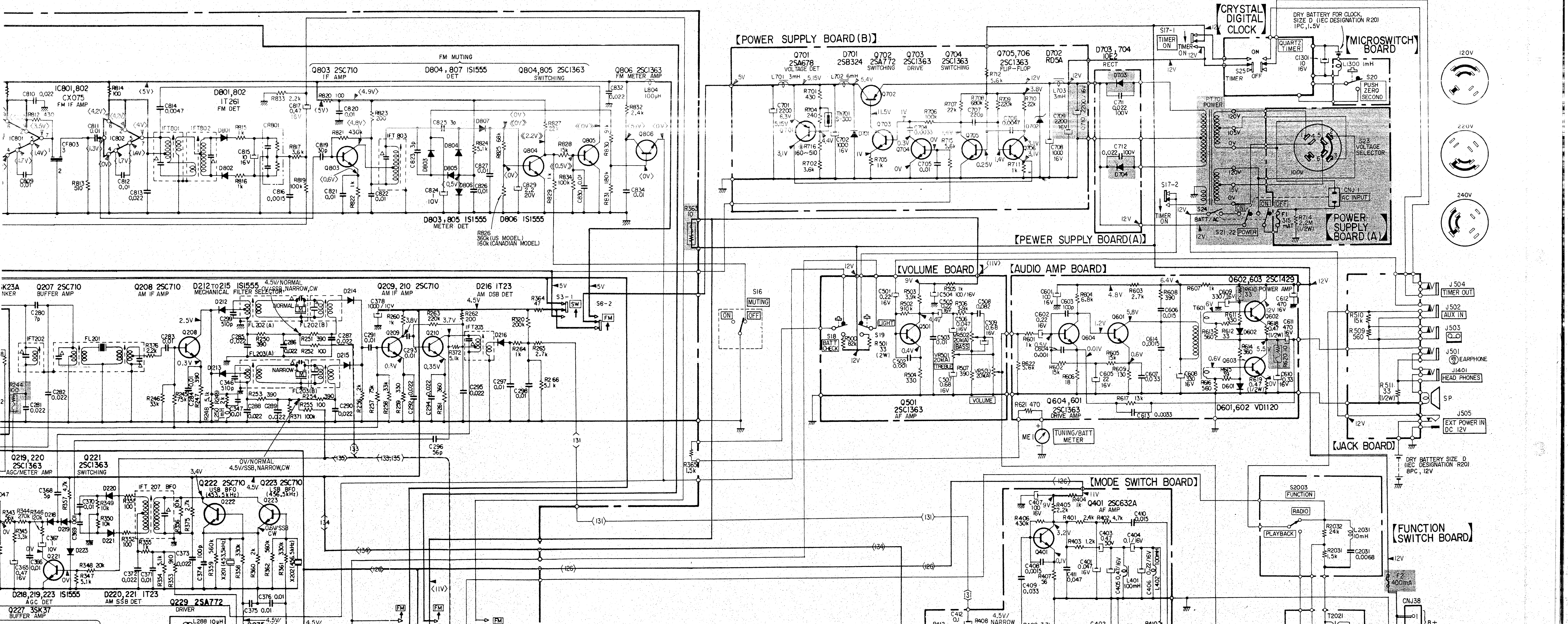
SW BAND	IC TERMINAL					
	IC1003				IC1004	
	③	④	⑤	⑥	③	④
1 MHz BAND	1	1	1	0	1	1
2	0	1	1	0	1	1
3	1	0	1	0	1	1
4	0	0	1	0	1	1
5	1	1	0	0	1	1
6	0	1	0	0	1	1
7	1	0	0	0	1	1
8	0	0	0	0	1	1
9	1	0	0	1	0	1
10	0	0	0	1	0	1
11	1	1	1	0	0	1
12	0	1	1	0	0	1
13	1	0	1	0	0	1
14	0	0	1	0	0	1
15	1	1	0	0	0	1
16	0	1	0	0	0	1
17	1	0	0	0	0	1

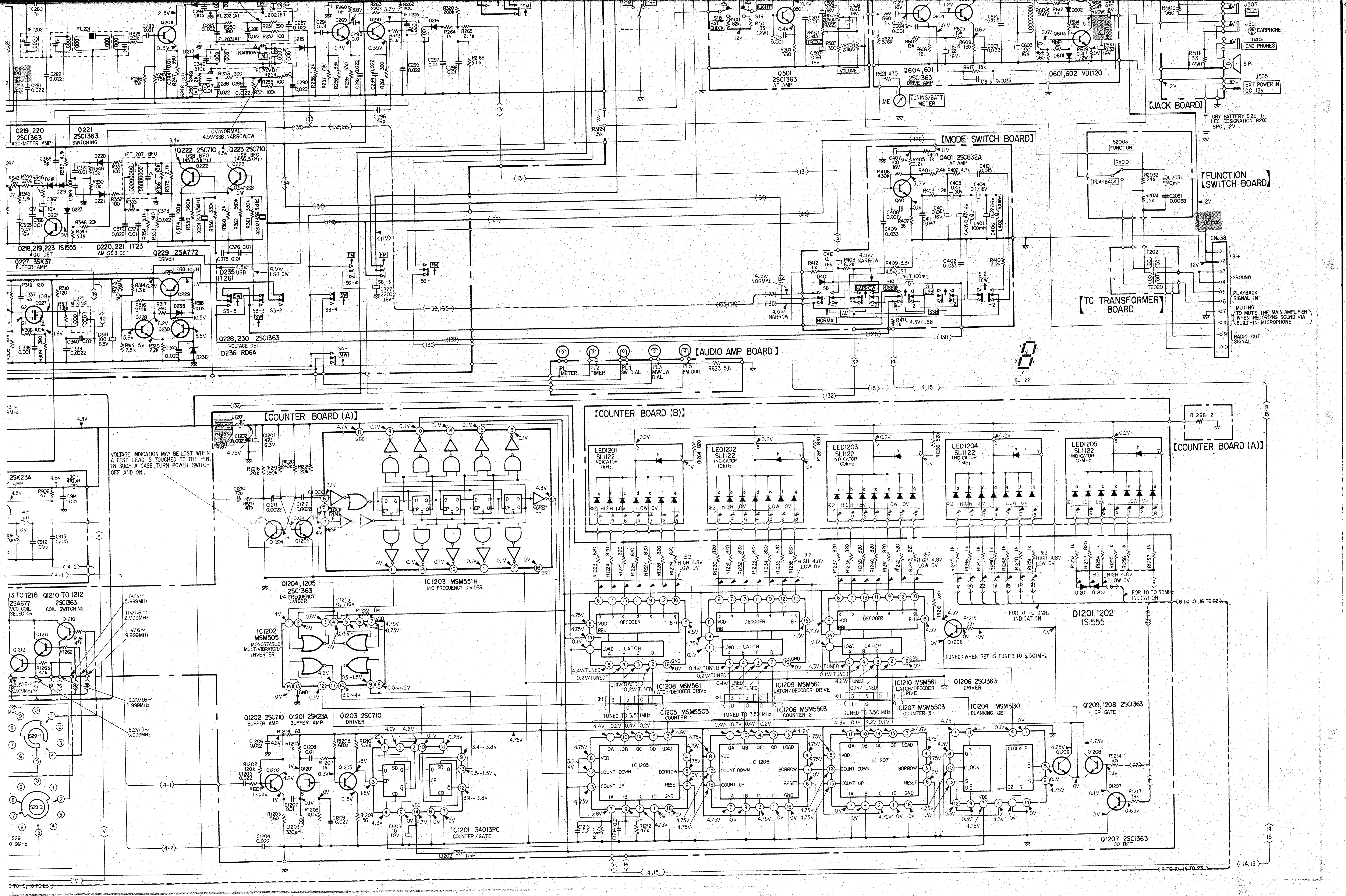
SW BAND	IC TERMINAL					
	IC1003				IC1004	
	③	④	⑤	⑥	③	④
18 MHz BAND	0	0	0	0	0	1
19	1	0	0	1	1	0
20	0	0	0	1	1	0
21	1	1	1	0	1	0
22	0	1	1	0	1	0
23	1	0	1	0	1	0
24	0	0	1	0	1	0
25	1	1	0	0	1	0
26	0	1	0	0	1	0
27	1	0	0	0	1	0
28	0	0	0	0	1	0
29	1	0	0	1	0	0

- Switch

Ref. No.	Switch	Position
S001	FM FM1 – FM2	FM1
S1-1	ANT SELECT MW, LW-EXT ANT	LOCAL
S1-2	ANT SELECT SW-ANT ROD-EXT	ROD
S2	SW ANT COIL SELECT L108-L109	L108
S3-1 – 3-6	BAND SELECTOR, SW	ON
S4-1 – 4-6	BAND SELECTOR, MW	OFF
S5-1 – 5-6	BAND SELECTOR, LW	OFF
S6-1 – 6-4	BAND SELECTOR, FM	OFF
S8	MODE, NORMAL	ON
S9	MODE, NARROW	OFF
S10	MODE, USB-SSB	OFF
S11	MODE, LSB-SSB	OFF
S12	MODE, CW	OFF
S14	NOISE BLANKER	OFF
S15	AFC	OFF
S16	MUTING	OFF
S17	TIMER ON	OFF
S18	BATT CHECK	OFF
S19	LIGHT	OFF
S20	ZERO SECOND	OFF

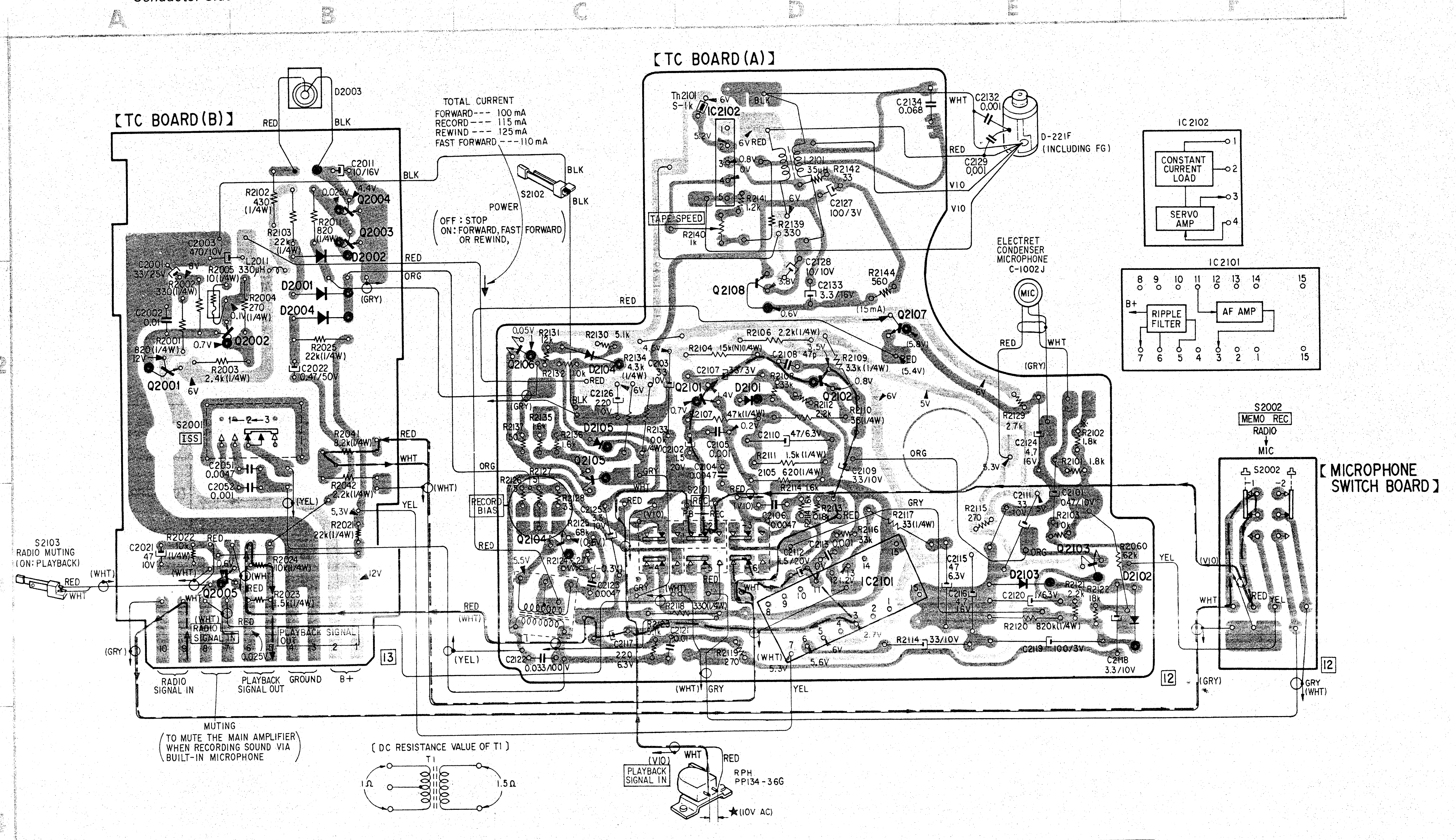
Ref. No.	Switch	Position
S21	POWER	OFF
S22	OFF-ON-TIMER ON	OFF
S23	VOLTAGE SELECT	100 V
S24	BATT/AC	BATT
S25	QUARTZ TIMER	OFF
S26	SW BAND SELECTOR 10 MHz STEP 0 – 10 MHz – 20	0
S27 to 29	SW BAND SELECTOR 1 MHz STEP 0 – 1MHz – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9	9
S2003	FUNCTION RADIO-PLAYBACK	RADIO


[POWER SUPPLY BOARD (B)]
[PEWER SUPPLY BOARD (A)]
[CRYSTAL DIGITAL CLOCK]
[MICROSWITCH BOARD]
[POWER SUPPLY BOARD (A)]
[VOLUME BOARD]
[AUDIO AMP BOARD]
[JACK BOARD]
[MODE SWITCH BOARD]
[FUNCTION SWITCH BOARD]
DRY BATTERY FOR CLOCK, SIZE D (IEC DESIGNATION R20) 1PC, 1.5V
DRY BATTERY SIZE D (IEC DESIGNATION R20) 8PC, 12V
IC801,802 CX075 FM IF AMP
D801,802 1T261 FM DET
Q803 2SC710 IF AMP
FM MUTING
D804,807 1S1555 DET
Q804,805 2SC1363 SWITCHING
Q806 2SC1363 FM METER AMP
D803,805 1S1555 METER DET
D806 1S1555
R826 360k (US MODEL) 160k (CANADIAN MODEL)
Q701 2SA678 VOLTAGE DET
D701 2SB324
Q702 2SA772 SWITCHING
Q703 2SC1363 DRIVE
Q704 2SC1363 SWITCHING
Q705,706 2SC1363 FLIP-FLOP
D702 RD5A
D703,704 10E2 RECT
S23 VOLTAGE SELECTOR
AC INPUT
POWER
PUSH ZERO SECOND
QUARTZ TIMER
120V
220V
240V
Q207 2SC710 BUFFER AMP
Q208 2SC710 AM IF AMP
D212 TO 215 1S1555 MECHANICAL FILTER SELECTOR
4.5V/NORMAL OV/SSB, NARROW, CW
Q209,210 2SC710 AM IF AMP
D216 1T23 AM DSB DET
Q219,220 2SC1363 AGC/METER AMP
Q221 2SC1363 SWITCHING
OV/NORMAL 4.5V/SSB, NARROW, CW
Q222 2SC710 USB BFO (453.5kHz)
Q223 2SC710 LSB BFO (456.5kHz)
D218,219,223 1S1555 AGC DET
D220,221 1T23 AM SSB DET
Q229 2SA772 DRIVER
Q227 3SK37 BUFFER AMP
Q501 2SC1363 AF AMP
Q604,601 2SC1363 DRIVE AMP
Q602,603 2SC1429 POWER AMP
D601,602 VD1120
Q401 2SC632A AF AMP
TUNING/BATT METER
J504 TIMER OUT
J502 AUX IN
J503
J501 EARPHONE
J1401 HEAD PHONES
SP
J505 EXT POWER IN DC 12V
S2003 FUNCTION
RADIO
PLAYBACK
F2 400mA
CNJ38


Q219, 220 2SC1363 AGC/METER AMP
Q221 2SC1363 SWITCHING
Q222 2SC710 USB BFO (453.5kHz)
Q223 2SC710 LSB BFO (456.5kHz)
IFT 207 BFO
D218, 219, 223 1S1555 AGC DET
D220, 221 1T23 AM SSB DET
Q229 2SA772 DRIVER
Q227 3SK37 BUFFER AMP
L275 MIXING
Q228, 230 2SC1363 VOLTAGE DET
D236 RD6A
0V/NORMAL 4.5V/SSB, NARROW, CW
4.5V/ LSB CW
IFT202
FL201
FL202(A)
FL202(B)
FL203(A)
FL203(B)
NARROW
IFT203
Q501 2SC1363 AF AMP
Q604, 601 2SC1363 DRIVE AMP
D601, 602 VD1120
TUNING/BATT METER
VOLUME
TREBLE
BASS
LIGHT
BATT CHECK
J503
J501 EARPHONE
J1401 HEAD PHONES
SP
J505 EXT POWER IN DC 12V
【JACK BOARD】
DRY BATTERY SIZE D (IEC DESIGNATION R20) 8PC, 12V
【MODE SWITCH BOARD】
Q401 2SC632A AF AMP
S2003 FUNCTION
RADIO
PLAYBACK
【FUNCTION SWITCH BOARD】
F2 400mA
CNJ38
T2021
T2020
【TC TRANSFORMER BOARD】
B+
GROUND
PLAYBACK SIGNAL IN
MUTING (TO MUTE THE MAIN AMPLIFIER WHEN RECORDING SOUND VIA BUILT-IN MICROPHONE)
RADIO OUT SIGNAL
4.5V/ NORMAL
4.5V/ NARROW
4.5V/USB
4.5V/LSB
NORMAL
NARROW
AM
USB
LSB
SSB
CW
S6-1
S6-3
S6-4
S3-2
S3-3
S3-4
S3-5
S4-1
MW
SW
FM
【AUDIO AMP BOARD】
PL1 METER
PL2 TIMER
PL4 SW DIAL
PL3 MW/LW DIAL
PL5 FM DIAL
R623 5.6
SL1122
【COUNTER BOARD (A)】
【COUNTER BOARD (B)】
【COUNTER BOARD (A)】
VOLTAGE INDICATION MAY BE LOST WHEN A TEST LEAD IS TOUCHED TO THE PIN. IN SUCH A CASE, TURN POWER SWITCH OFF AND ON.
IC1203 MSM551H 1/10 FREQUENCY DIVIDER
CLOCK
CLOCK ENABLE
RESET
CARRY OUT
Q1204, 1205 2SC1363 1/4 FREQUENCY DIVIDER
IC1202 MSM505 MONOSTABLE MULTIVIBRATOR/INVERTER
LED1201 SL1122 INDICATOR 1kHz
LED1202 SL1122 INDICATOR 10kHz
LED1203 SL1122 INDICATOR 100kHz
LED1204 SL1122 INDICATOR 1MHz
LED1205 SL1122 INDICATOR 10MHz
※2 HIGH 4.8V LOW 0V
DECODER
LATCH
IC1208 MSM561 LATCH/DECODER DRIVE
IC1209 MSM561 LATCH/DECODER DRIVE
IC1210 MSM561 LATCH/DECODER DRIVE
TUNED TO 3.501MHz
IC1205 MSM5503 COUNTER 1
IC1206 MSM5503 COUNTER 2
IC1207 MSM5503 COUNTER 3
IC1204 MSM5130 BLANKING DET
COUNT DOWN
COUNT UP
BORROW
RESET
LOAD
FOR 10 TO 30MHz INDICATION
FOR 0 TO 9MHz INDICATION
D1201, 1202 1S1555
Q1206 2SC1363 DRIVER
TUNED: WHEN SET IS TUNED TO 3.501MHz
Q1209, 1208 2SC1363 OR GATE
Q1207 2SC1363 OO DET
Q1202 2SC710 BUFFER AMP
Q1201 2SK23A BUFFER AMP
Q1203 2SC710 DRIVER
IC1201 34013PC COUNTER/GATE
L1202 1mH
2SK23A
Q1213 TO 1216 2SA677 VCO COIL SELECTOR
Q1210 TO 1212 2SC1363 COIL SWITCHING
11V/3~5.999MHz
11V/1.6~2.999MHz
11V/6~9.999MHz
6.2V/1.6~2.999MHz
6.2V/3~5.999MHz
S29-1
S29-2
S29
J
K

4-3. MOUNTING DIAGRAM – Tape Recorder Section –

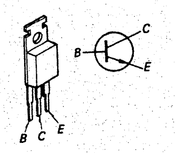
– Conductor Side –


A
B
C
D
E
F
1
2
3
4
[TC BOARD (B)]
[TC BOARD (A)]
D2003
RED
BLK
TOTAL CURRENT
FORWARD--- 100 mA
RECORD--- 115 mA
REWIND--- 125 mA
FAST FORWARD---110 mA
POWER
S2102
(OFF : STOP
ON : FORWARD, FAST FORWARD OR REWIND)
Th2101 S-1k
IC2102
C2134 0.068
C2132 0.001
WHT
D-221F (INCLUDING FG)
C2129 0.001
V10
TAPE SPEED
Q2108
Q2107
Q2101
Q2102
Q2103
Q2104
Q2105
Q2106
D2101
D2102
D2103
D2104
D2105
IC2101
RECORD BIAS
ELECTRET CONDENSER MICROPHONE C-1002J
MIC
IC2102
CONSTANT CURRENT LOAD
SERVO AMP
IC2101
RIPPLE FILTER
AF AMP
B+
S2002
MEMO REC
RADIO
MIC
[MICROPHONE SWITCH BOARD]
S2001
ISS
Q2001
Q2002
Q2003
Q2004
Q2005
D2001
D2004
S2103 RADIO MUTING (ON: PLAYBACK)
RADIO SIGNAL IN
PLAYBACK SIGNAL OUT
GROUND
B+
PLAYBACK SIGNAL
13
12
MUTING
(TO MUTE THE MAIN AMPLIFIER WHEN RECORDING SOUND VIA BUILT-IN MICROPHONE)
[DC RESISTANCE VALUE OF T1]
T1
1Ω
1.5Ω
(V10)
PLAYBACK SIGNAL IN
WHT
RED
RPH PP134-36G
★(10V AC)

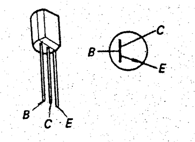
Q	2001	2002 2005	2004 2003
D			2002 2001 2004

IC				2102		2101				
Q	2106	2104	2105	2101	2108	2102	2107		2103	
D		2104	2105	2101				2103		2102

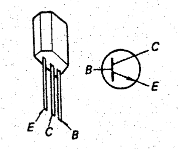
Q2001: 2SD1061



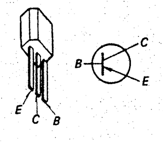
Q2002 – 2005: 2SC634A (2SC1363)



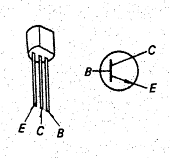
Q2101, 2102: 2SC632A
Q2103, 2104: 2SC634A
Q2106, 2107: 2SC634A



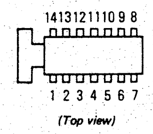
Q2105: 2SA678



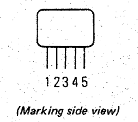
Q2108: 2SC1474



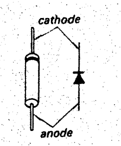
IC2101: CX170


14 13 12 11 10 9 8
1 2 3 4 5 6 7
(Top view)

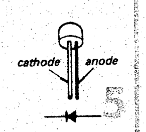
IC2102: BX295

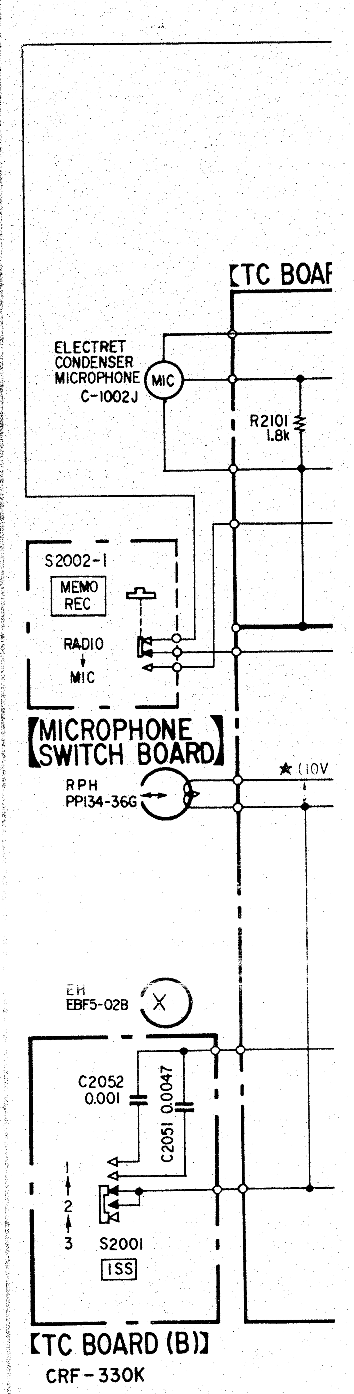

1 2 3 4 5
(Marking side view)

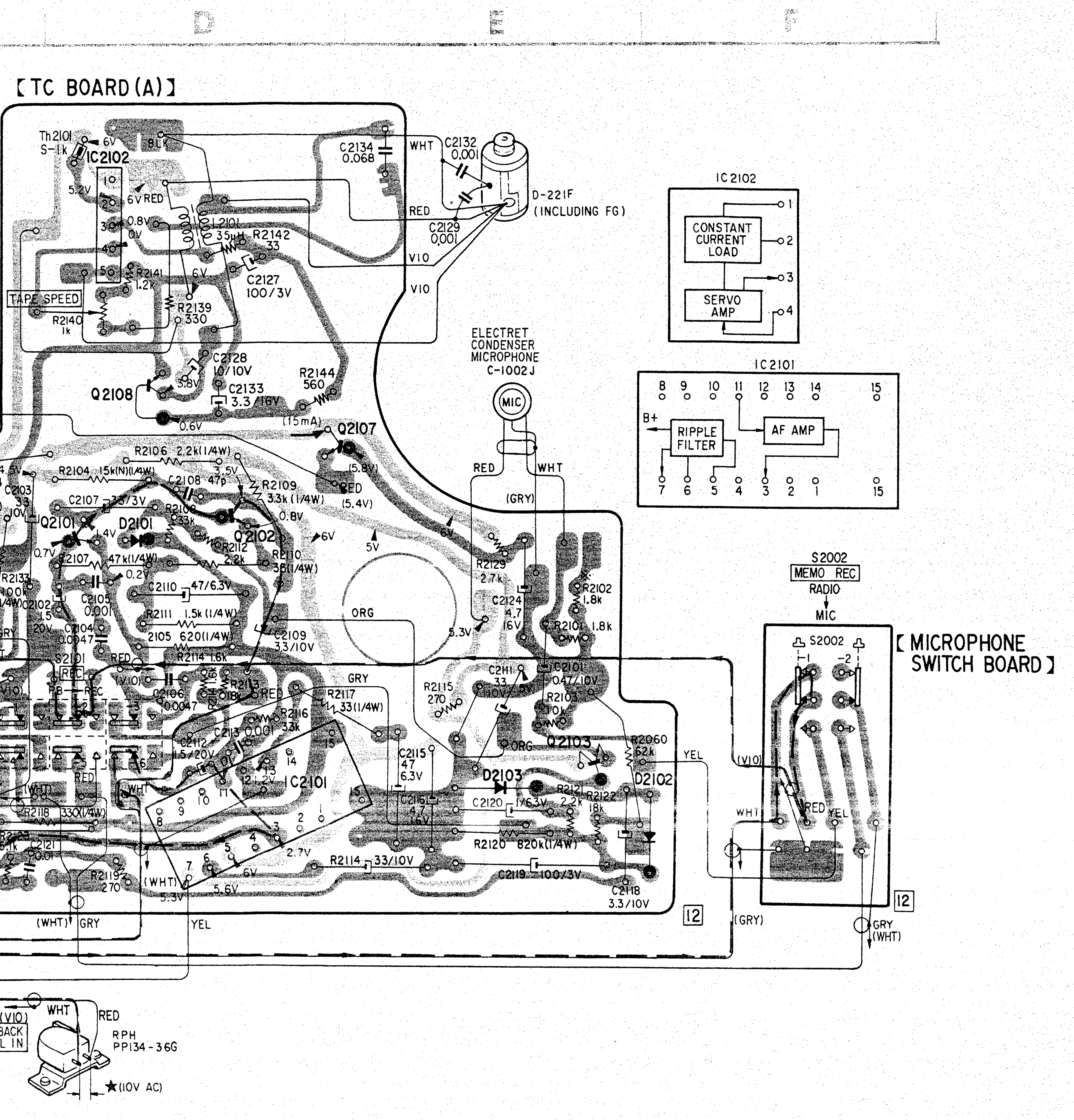
D2001, 2002
D2004, 2101 – 2105 } : 1S1555


cathode
anode

D2003: TLR109

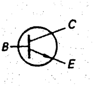

cathode
anode


A
1
2
3
4
5
[TC BOAR
ELECTRET CONDENSER MICROPHONE C-1002J
MIC
R2101 1.8k
S2002-1
MEMO REC
RADIO
MIC
[MICROPHONE SWITCH BOARD]
RPH PP134-36G
★(10V
EH EBF5-028
C2052 0.001
C2051 0.0047
1
2
3
S2001
ISS
[TC BOARD (B)]
CRF-330K

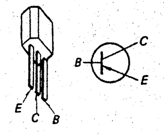

D
E
F
[TC BOARD (A)]
Th2101 S-1k
IC2102
TAPE SPEED
R2140 1k
R2141 1.2
R2139 330
R2142 33
L2101 35μH
C2127 100/3V
C2128 10/10V
C2133 3.3/16V
R2144 560
Q2108
Q2107
C2134 0.068
WHT
C2132 0.001
C2129 0.001
RED
V10
D-221F (INCLUDING FG)
IC2102
CONSTANT CURRENT LOAD
SERVO AMP
IC2101
RIPPLE FILTER
AF AMP
B+
ELECTRET CONDENSER MICROPHONE C-1002J
MIC
S2002
MEMO REC
RADIO
MIC
[MICROPHONE SWITCH BOARD]
R2106 2.2k(1/4W)
R2104 15k(N)(1/4W)
C2108 47p
R2109 3.3k(1/4W)
D2101
Q2101
Q2102
R2110 33(1/4W)
C2110 47/6.3V
R2111 1.5k (1/4W)
R2105 620(1/4W)
C2109 33/10V
R2114 1.6k
R2115 270
R2117 33(1/4W)
R2129 2.7k
C2124 4.7/16V
R2102 1.8k
R2101 1.8k
C2111 33
C2101 0.47/10V
R2103
Q2103
R2060 62k
D2102
D2103
C2115 47 6.3V
C2116
C2120 1/6.3V
R2121 2.2k
R2122 18k
R2120 820k(1/4W)
C2119 100/3V
C2118 3.3/10V
IC2101
C2113 0.001
R2116 33k
R2118 330(1/4W)
C2121 0.001
R2119 270
R2114 33/10V
GRY
YEL
ORG
(WHT) GRY
RPH PP134-36G
★(10V AC)
12

2102	2101				
2101	2108	2102	2107	2103	
2101		2103			2102

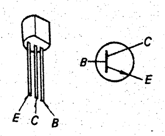
02: 2SC632A
04: 2SC634A
07: 2SC634A



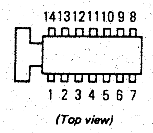
Q2105: 2SA678



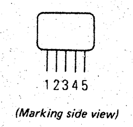
Q2108: 2SC1474



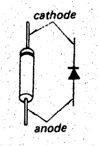
IC2101: CX170


14131211109 8
1 2 3 4 5 6 7
(Top view)

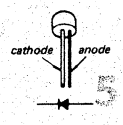
IC2102: BX295


12345
(Marking side view)

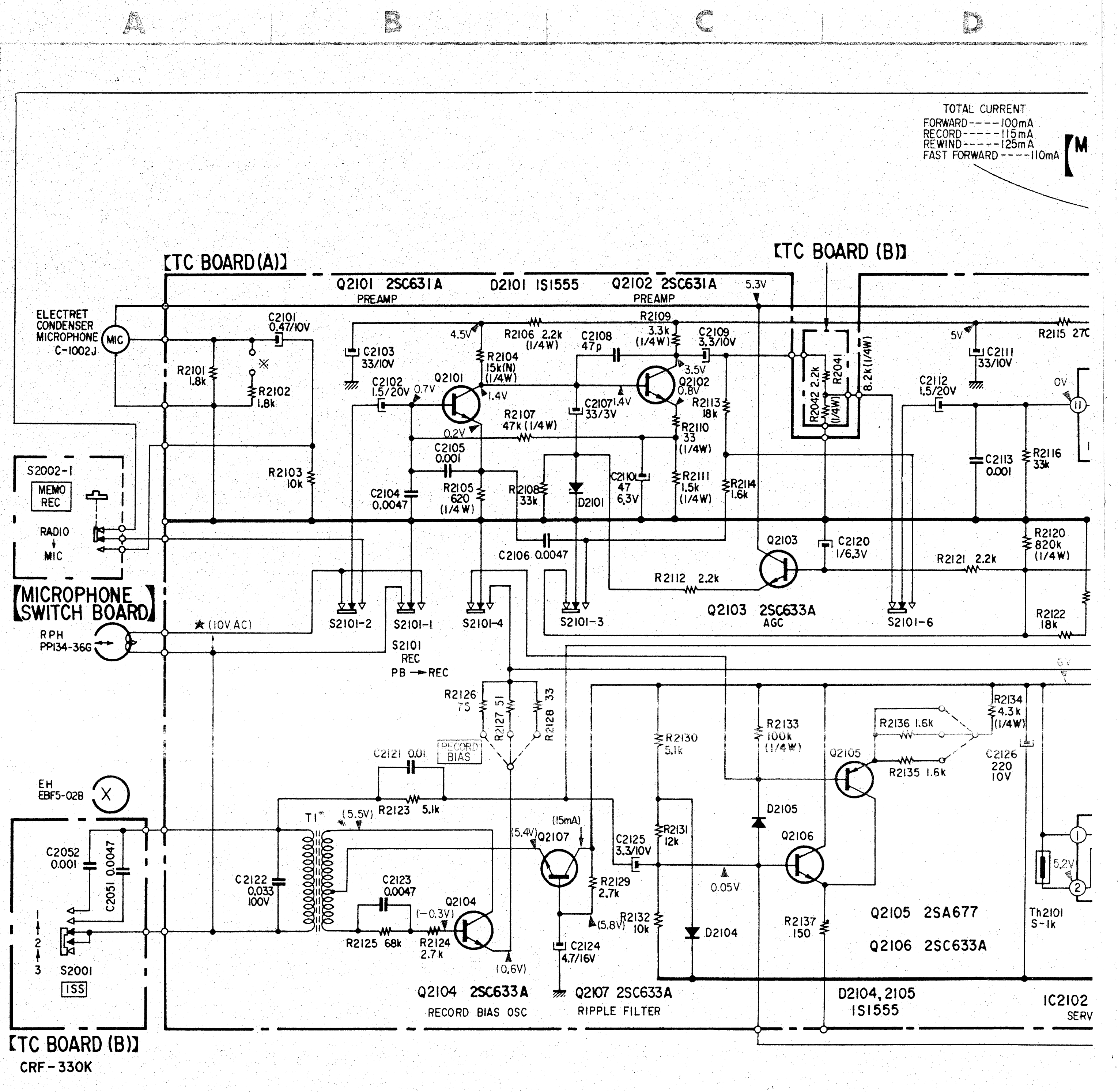
D2001, 2002
D2004, 2101 – 2105 } : 1S1555


cathode
anode

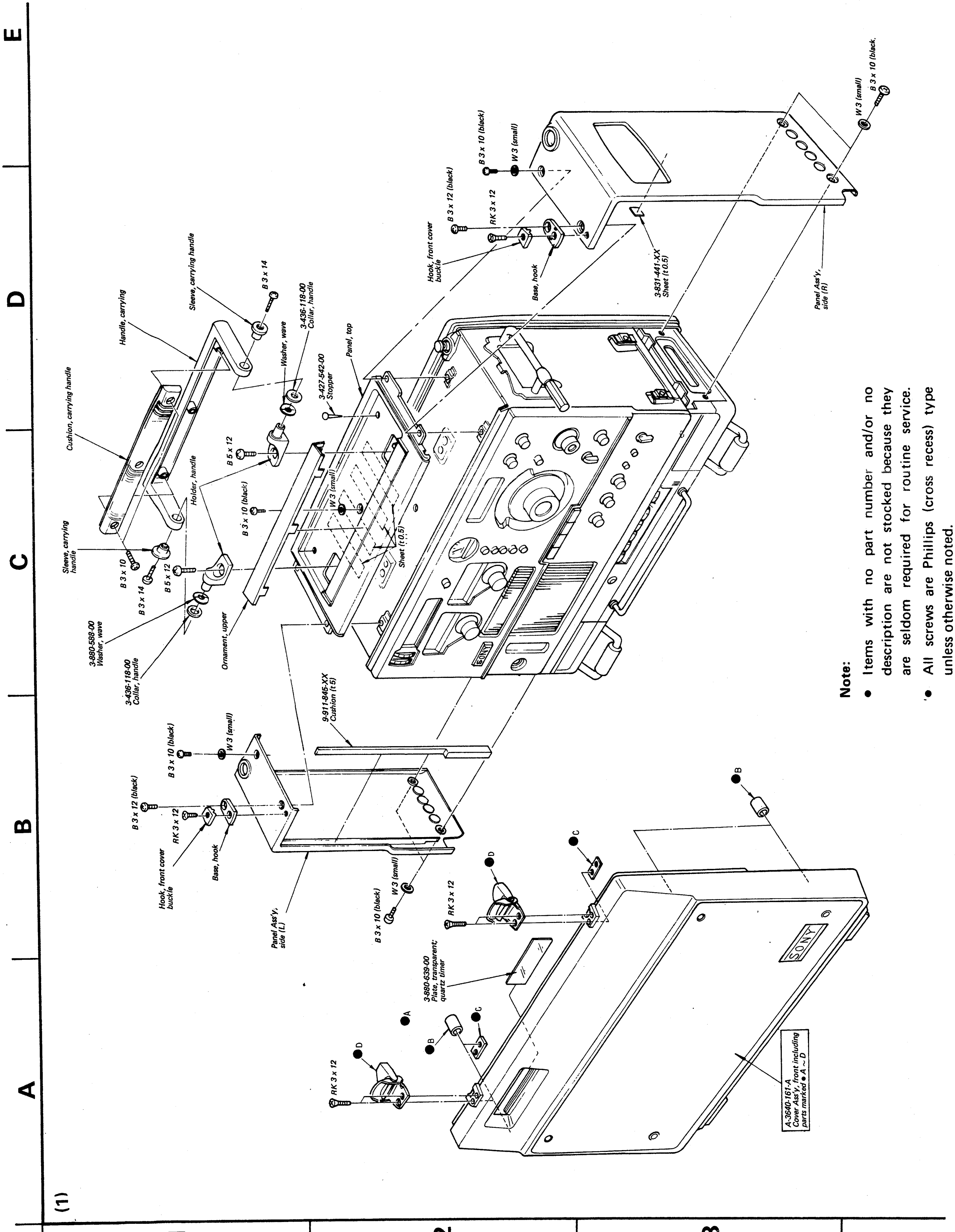
D2003: TLR109


cathode
anode

4-4. SCHEMATIC DIAGRAM – Tape Recorder Section –


A
B
C
D
TOTAL CURRENT
FORWARD----100mA
RECORD----115mA
REWIND----125mA
FAST FORWARD----110mA
[TC BOARD(A)]
[TC BOARD (B)]
Q2101 2SC631A PREAMP
D2101 1S1555
Q2102 2SC631A PREAMP
ELECTRET CONDENSER MICROPHONE C-1002J
MIC
C2101 0.47/10V
C2103 33/10V
R2101 1.8k
R2102 1.8k
C2102 1.5/20V
R2104 15k(N) (1/4W)
R2106 2.2k (1/4W)
C2108 47p
R2109 3.3k (1/4W)
C2109 3.3/10V
R2107 47k (1/4W)
C2107 33/3V
R2113 18k
R2110 33 (1/4W)
C2105 0.001
R2103 10k
C2104 0.0047
R2105 620 (1/4W)
R2108 33k
D2101
C2110 47 6.3V
R2111 1.5k (1/4W)
R2114 1.6k
R2042 2.2k
R2041
8.2k (1/4W)
R2115 270
C2111 33/10V
C2112 1.5/20V
C2113 0.001
R2116 33k
C2106 0.0047
R2112 2.2k
Q2103 2SC633A AGC
C2120 1/6.3V
R2121 2.2k
R2120 820k (1/4W)
R2122 18k
S2002-1
MEMO REC
RADIO
MIC
[MICROPHONE SWITCH BOARD]
RPH PP134-36G
★(10V AC)
S2101-2
S2101-1
S2101-4
S2101-3
S2101-6
S2101 REC PB → REC
R2126 75
R2127 51
R2128 33
C2121 0.01
BIAS
R2123 5.1k
EH EBF5-02B
C2052 0.001
C2051 0.0047
T1
C2122 0.033 100V
C2123 0.0047
R2125 68k
R2124 2.7k
Q2104 2SC633A RECORD BIAS OSC
Q2107 2SC633A RIPPLE FILTER
C2125 3.3/10V
R2129 2.7k
R2132 10k
C2124 4.7/16V
R2130 5.1k
R2131 12k
R2133 100k (1/4W)
D2105
D2104
Q2106
Q2105
R2136 1.6k
R2135 1.6k
R2134 4.3k (1/4W)
C2126 220 10V
R2137 150
Q2105 2SA677
Q2106 2SC633A
D2104, 2105 1S1555
Th2101 S-1k
IC2102 SERV
S2001 ISS
[TC BOARD (B)]
CRF-330K

SECTION 5
EXPLODED VIEWS


(1)
A
B
C
D
E
1
2
3
Sleeve, carrying handle
Handle, carrying
B 3 x 14
3-436-118-00
Collar, handle
Washer, wave
3-427-542-00
Stopper
Panel, top
Cushion, carrying handle
Holder, handle
B 5 x 12
B 3 x 10 (black)
W 3 (small)
Sheet (t 0.5)
Sleeve, carrying handle
B 3 x 10
B 3 x 14
B 5 x 12
3-880-588-00
Washer, wave
3-436-118-00
Collar, handle
Ornament, upper
9-911-845-XX
Cushion (t 5)
B 3 x 10 (black)
W 3 (small)
B 3 x 12 (black)
RK 3 x 12
Hook, front cover buckle
Base, hook
Panel Ass'y, side (L)
B 3 x 10 (black)
W 3 (small)
RK 3 x 12
3-880-639-00
Plate, transparent; quartz timer
A
B
C
D
RK 3 x 12
A-3640-161-A
Cover Ass'y, front including parts marked ● A ~ D
B 3 x 10 (black)
W 3 (small)
B 3 x 12 (black)
RK 3 x 12
Hook, front cover buckle
Base, hook
3-831-441-XX
Sheet (t 0.5)
Panel Ass'y, side (R)
W 3 (small)
B 3 x 10 (black)
SONY

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.

(2) **Note:**

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  (–) = slotted head
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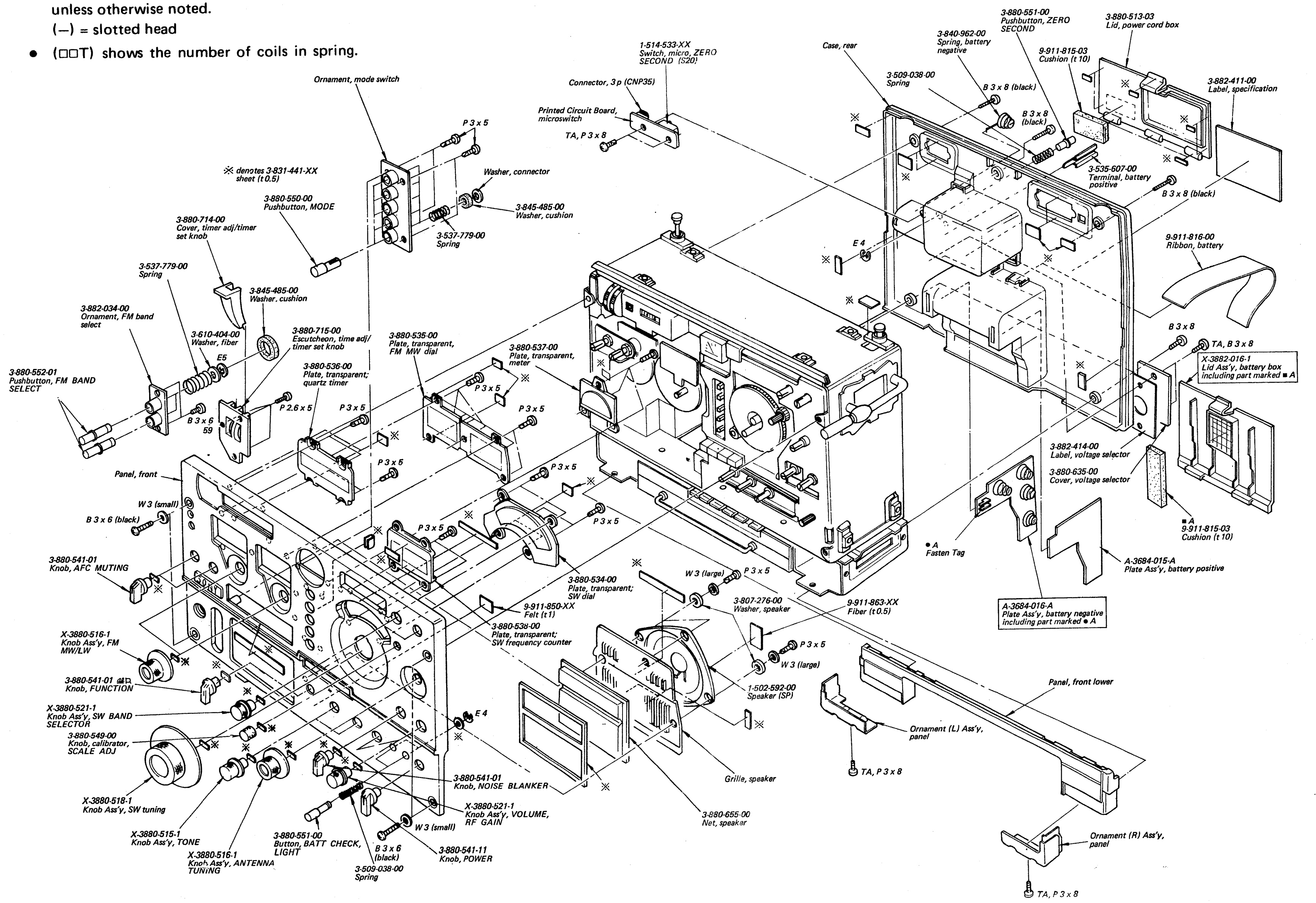
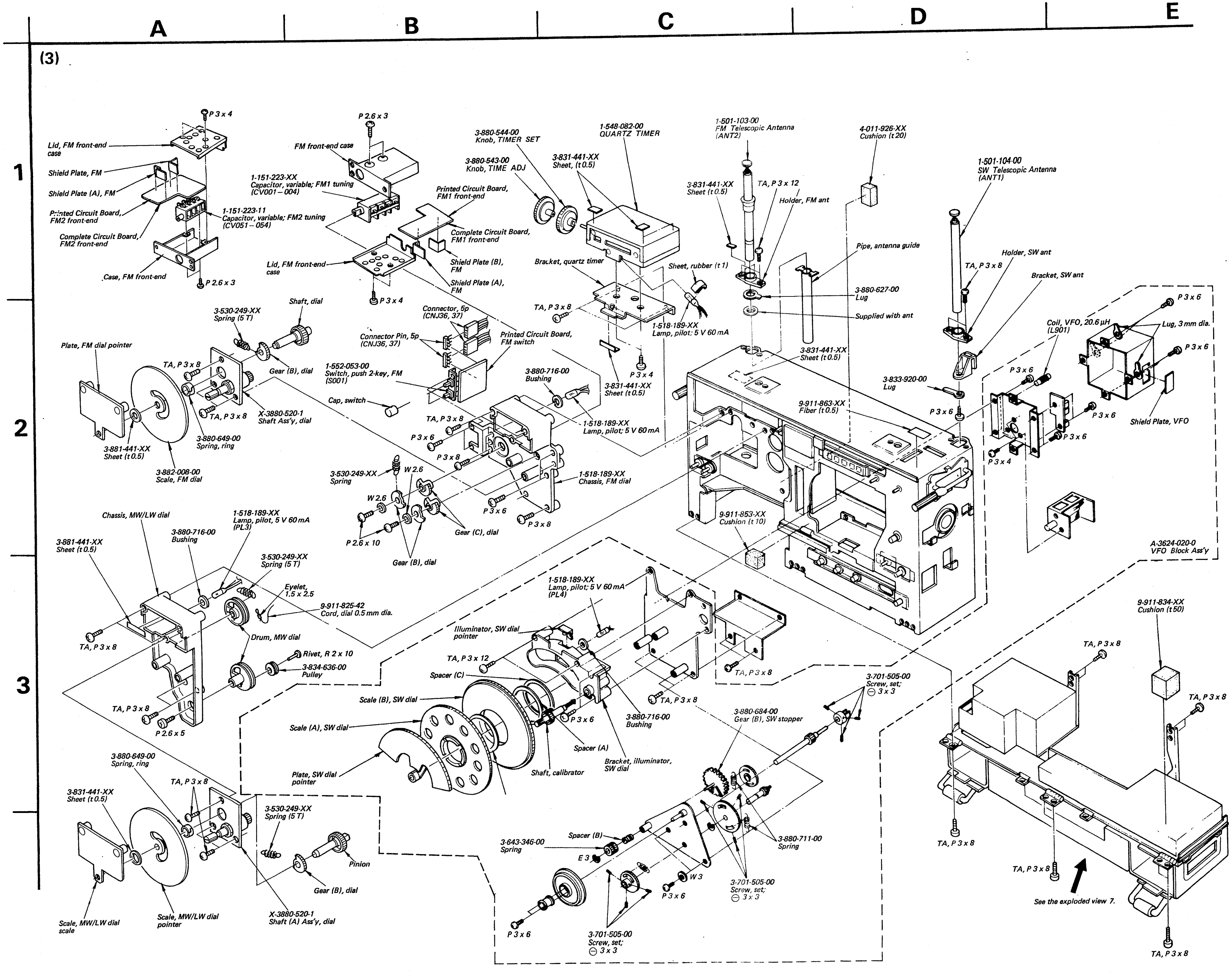

3-880-551-00
Pushbutton, ZERO SECOND
3-880-513-03
Lid, power cord box
3-840-962-00
Spring, battery negative
9-911-815-03
Cushion (t 10)
3-882-411-00
Label, specification
Case, rear
1-514-533-XX
Switch, micro, ZERO SECOND (S20)
3-509-038-00
Spring
B 3 x 8 (black)
B 3 x 8 (black)
Connector, 3p (CNP35)
Printed Circuit Board, microswitch
TA, P 3 x 8
Ornament, mode switch
P 3 x 5
3-535-607-00
Terminal, battery positive
B 3 x 8 (black)
※ denotes 3-831-441-XX sheet (t 0.5)
Washer, connector
3-880-550-00
Pushbutton, MODE
3-845-485-00
Washer, cushion
3-880-714-00
Cover, timer adj/timer set knob
3-537-779-00
Spring
E 4
9-911-816-00
Ribbon, battery
3-537-779-00
Spring
3-845-485-00
Washer, cushion
3-882-034-00
Ornament, FM band select
3-610-404-00
Washer, fiber
E5
3-880-715-00
Escutcheon, time adj/timer set knob
3-880-535-00
Plate, transparent, FM MW dial
3-880-537-00
Plate, transparent, meter
B 3 x 8
TA, B 3 x 8
X-3882-016-1
Lid Ass'y, battery box including part marked ■ A
3-880-552-01
Pushbutton, FM BAND SELECT
3-880-536-00
Plate, transparent; quartz timer
P 2.6 x 5
P 3 x 5
P 3 x 5
P 3 x 5
B 3 x 6
59
P 3 x 5
P 3 x 5
3-882-414-00
Label, voltage selector
3-880-635-00
Cover, voltage selector
Panel, front
W 3 (small)
B 3 x 6 (black)
P 3 x 5
P 3 x 5
● A
Fasten Tag
■ A
9-911-815-03
Cushion (t 10)
A-3684-015-A
Plate Ass'y, battery positive
3-880-541-01
Knob, AFC MUTING
3-880-534-00
Plate, transparent; SW dial
W 3 (large)
P 3 x 5
9-911-850-XX
Felt (t 1)
3-807-276-00
Washer, speaker
9-911-863-XX
Fiber (t 0.5)
A-3684-016-A
Plate Ass'y, battery negative including part marked ● A
3-880-538-00
Plate, transparent; SW frequency counter
X-3880-516-1
Knob Ass'y, FM MW/LW
P 3 x 5
W 3 (large)
3-880-541-01
Knob, FUNCTION
1-502-592-00
Speaker (SP)
Panel, front lower
X-3880-521-1
Knob Ass'y, SW BAND SELECTOR
E 4
3-880-549-00
Knob, calibrator, SCALE ADJ
Ornament (L) Ass'y, panel
TA, P 3 x 8
Grille, speaker
3-880-541-01
Knob, NOISE BLANKER
X-3880-518-1
Knob Ass'y, SW tuning
X-3880-521-1
Knob Ass'y, VOLUME, RF GAIN
W 3 (small)
3-880-655-00
Net, speaker
X-3880-515-1
Knob Ass'y, TONE
3-880-551-00
Button, BATT CHECK, LIGHT
B 3 x 6 (black)
3-880-541-11
Knob, POWER
Ornament (R) Ass'y, panel
X-3880-516-1
Knob Ass'y, ANTENNA TUNING
3-509-038-00
Spring
TA, P 3 x 8

(3)


A
B
C
D
E
1
2
3
P 3 x 4
Lid, FM front-end case
Shield Plate, FM
Shield Plate (A), FM
Printed Circuit Board, FM2 front-end
Complete Circuit Board, FM2 front-end
1-151-223-11 Capacitor, variable; FM2 tuning (CV051 – 054)
Case, FM front-end
P 2.6 x 3
P 2.6 x 3
FM front-end case
1-151-223-XX Capacitor, variable; FM1 tuning (CV001 – 004)
Printed Circuit Board, FM1 front-end
Complete Circuit Board, FM1 front-end
Shield Plate (B), FM
Shield Plate (A), FM
Lid, FM front-end case
P 3 x 4
3-880-544-00 Knob, TIMER SET
3-880-543-00 Knob, TIME ADJ
3-831-441-XX Sheet, (t 0.5)
1-548-082-00 QUARTZ TIMER
Bracket, quartz timer
Sheet, rubber (t 1)
1-518-189-XX Lamp, pilot; 5 V 60 mA
TA, P 3 x 8
P 3 x 4
3-831-441-XX Sheet (t 0.5)
1-501-103-00 FM Telescopic Antenna (ANT2)
3-831-441-XX Sheet (t 0.5)
TA, P 3 x 12
Holder, FM ant
Pipe, antenna guide
3-880-627-00 Lug
Supplied with ant
4-011-926-XX Cushion (t 20)
3-831-441-XX Sheet (t 0.5)
9-911-863-XX Fiber (t 0.5)
1-501-104-00 SW Telescopic Antenna (ANT1)
Holder, SW ant
TA, P 3 x 8
Bracket, SW ant
3-833-920-00 Lug
P 3 x 6
Coil, VFO, 20.6 μH (L901)
Lug, 3 mm dia.
P 3 x 6
P 3 x 6
P 3 x 6
P 3 x 6
P 3 x 6
P 3 x 4
Shield Plate, VFO
A-3624-020-0 VFO Block Ass'y
3-530-249-XX Spring (5 T)
Shaft, dial
Plate, FM dial pointer
TA, P 3 x 8
Gear (B), dial
TA, P 3 x 8
X-3880-520-1 Shaft Ass'y, dial
3-880-649-00 Spring, ring
3-881-441-XX Sheet (t 0.5)
3-882-008-00 Scale, FM dial
Connector, 5p (CNJ36, 37)
Connector Pin, 5p (CNJ36, 37)
Printed Circuit Board, FM switch
1-552-053-00 Switch, push 2-key, FM (S001)
Cap, switch
3-880-716-00 Bushing
1-518-189-XX Lamp, pilot; 5 V 60 mA
TA, P 3 x 8
P 3 x 6
P 3 x 8
3-530-249-XX Spring
W 2.6
W 2.6
P 2.6 x 10
Gear (B), dial
Gear (C), dial
P 3 x 6
P 3 x 8
1-518-189-XX Chassis, FM dial
9-911-853-XX Cushion (t 10)
Chassis, MW/LW dial
3-881-441-XX Sheet (t 0.5)
3-880-716-00 Bushing
1-518-189-XX Lamp, pilot, 5 V 60 mA (PL3)
3-530-249-XX Spring (5 T)
Eyelet, 1.5 x 2.5
9-911-825-42 Cord, dial 0.5 mm dia.
Drum, MW dial
TA, P 3 x 8
Rivet, R 2 x 10
3-834-636-00 Pulley
TA, P 3 x 8
P 2.6 x 5
1-518-189-XX Lamp, pilot; 5 V 60 mA (PL4)
Illuminator, SW dial pointer
TA, P 3 x 12
Spacer (C)
Scale (B), SW dial
Scale (A), SW dial
Plate, SW dial pointer
Shaft, calibrator
P 3 x 6
Spacer (A)
3-880-716-00 Bushing
Bracket, illuminator, SW dial
TA, P 3 x 8
TA, P 3 x 8
3-880-649-00 Spring, ring
3-831-441-XX Sheet (t 0.5)
TA, P 3 x 8
3-530-249-XX Spring (5 T)
Pinion
Gear (B), dial
Scale, MW/LW dial scale
Scale, MW/LW dial pointer
X-3880-520-1 Shaft (A) Ass'y, dial
3-701-505-00 Screw, set; ⊖ 3 x 3
3-880-684-00 Gear (B), SW stopper
3-880-711-00 Spring
3-701-505-00 Screw, set; ⊖ 3 x 3
Spacer (B)
3-643-346-00 Spring
E 3
W 3
P 3 x 6
P 3 x 6
3-701-505-00 Screw, set; ⊖ 3 x 3
9-911-834-XX Cushion (t 50)
TA, P 3 x 8
TA, P 3 x 8
TA, P 3 x 8
TA, P 3 x 8
TA, P 3 x 8
See the exploded view 7.

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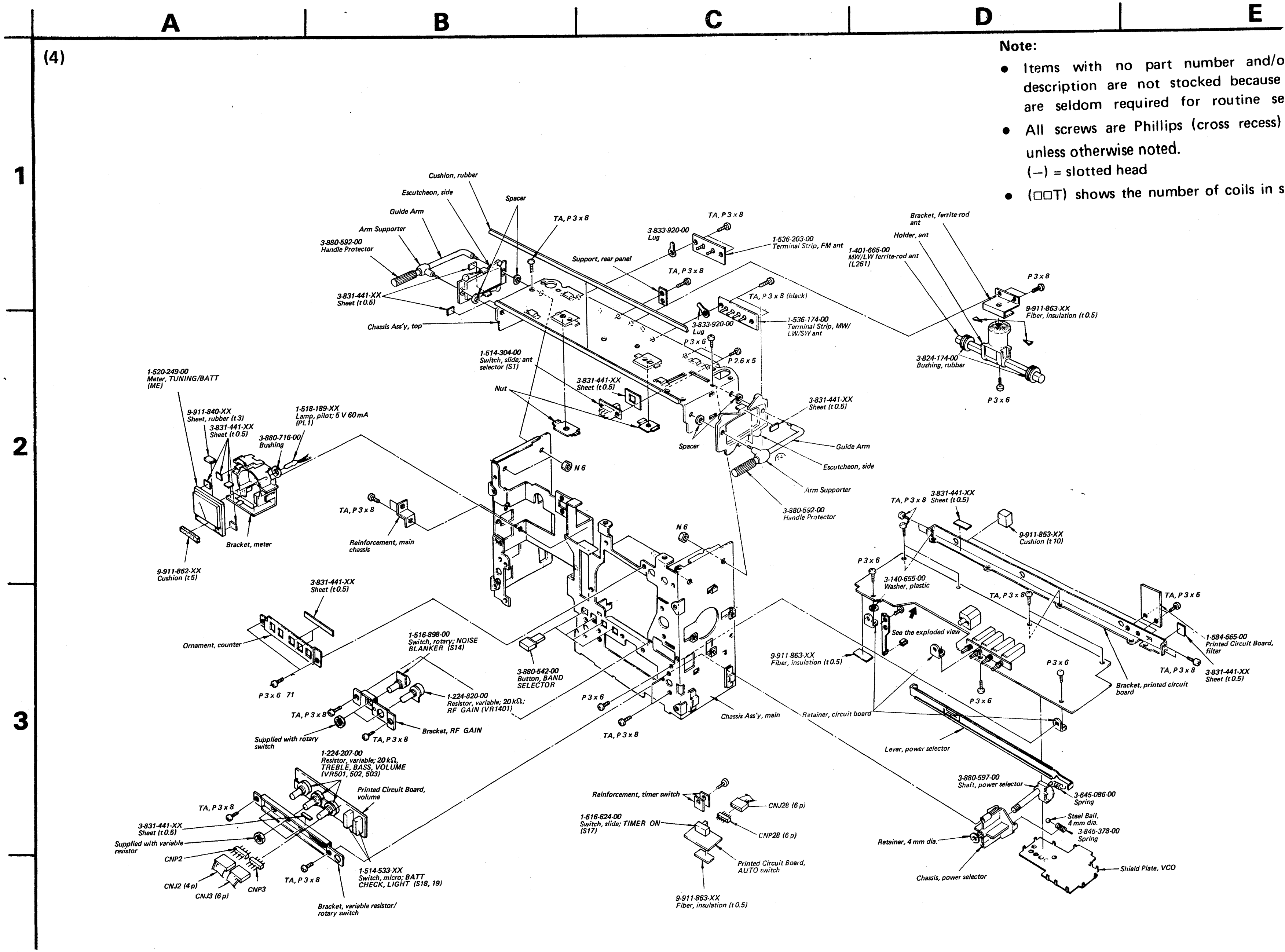
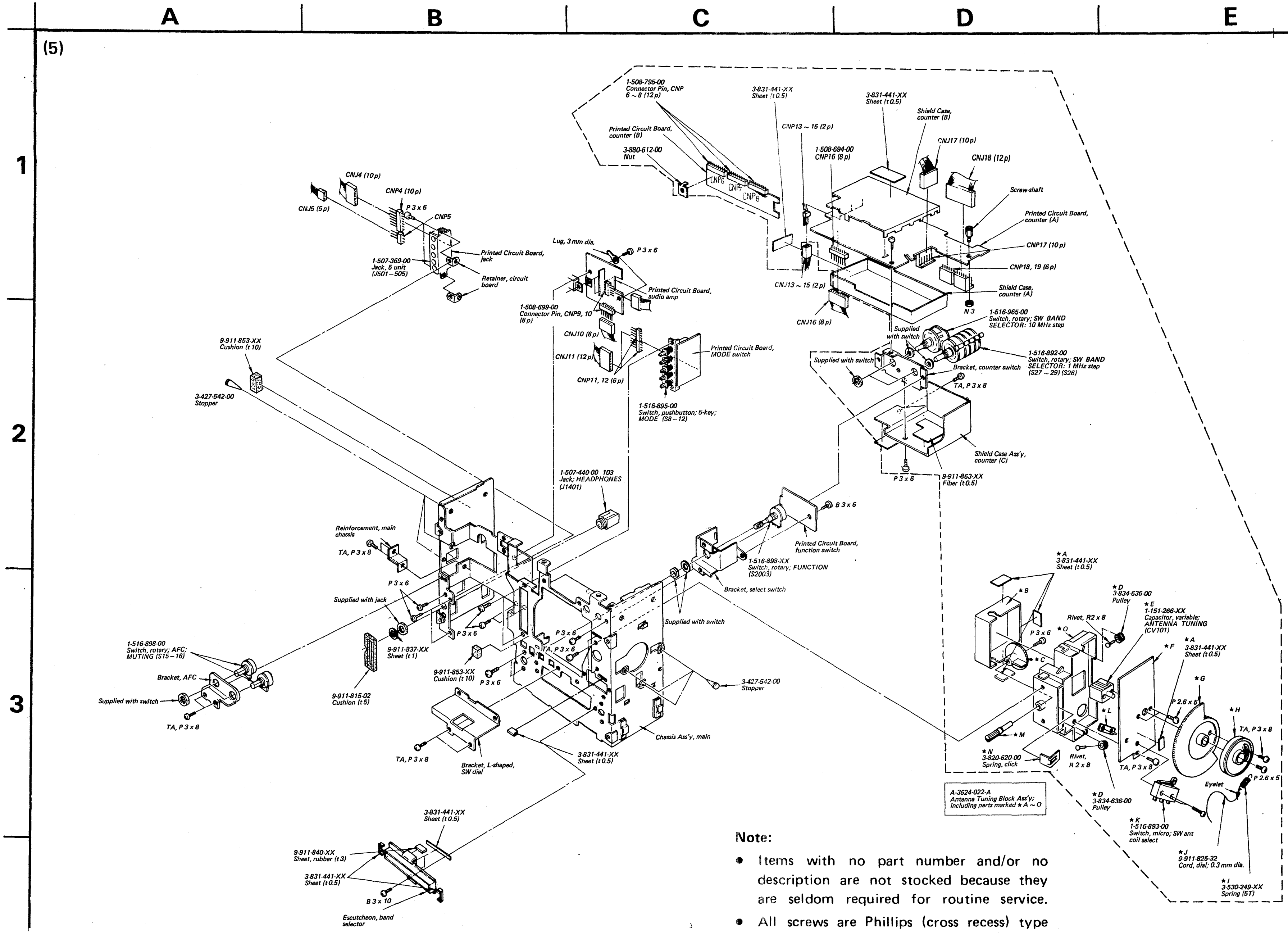

A
B
C
D
E
1
2
3
(4)
Cushion, rubber
Escutcheon, side
Spacer
Guide Arm
Arm Supporter
3-880-592-00
Handle Protector
TA, P 3 x 8
3-833-920-00
Lug
TA, P 3 x 8
1-536-203-00
Terminal Strip, FM ant
Support, rear panel
TA, P 3 x 8
1-401-665-00
MW/LW ferrite-rod ant
(L261)
Bracket, ferrite-rod ant
Holder, ant
P 3 x 8
9-911-863-XX
Fiber, insulation (t 0.5)
3-831-441-XX
Sheet (t 0.5)
Chassis Ass'y, top
TA, P 3 x 8 (black)
1-536-174-00
Terminal Strip, MW/LW/SW ant
3-833-920-00
Lug
P 3 x 6
P 2.6 x 5
3-824-174-00
Bushing, rubber
P 3 x 6
1-514-304-00
Switch, slide; ant selector (S1)
3-831-441-XX
Sheet (t 0.5)
Nut
3-831-441-XX
Sheet (t 0.5)
Guide Arm
Spacer
Escutcheon, side
Arm Supporter
3-880-592-00
Handle Protector
1-520-249-00
Meter, TUNING/BATT
(ME)
9-911-840-XX
Sheet, rubber (t 3)
3-831-441-XX
Sheet (t 0.5)
3-880-716-00
Bushing
1-518-189-XX
Lamp, pilot; 5 V 60 mA
(PL1)
N 6
TA, P 3 x 8
Reinforcement, main chassis
Bracket, meter
9-911-852-XX
Cushion (t 5)
N 6
TA, P 3 x 8
3-831-441-XX
Sheet (t 0.5)
9-911-853-XX
Cushion (t 10)
P 3 x 6
3-140-655-00
Washer, plastic
TA, P 3 x 8
TA, P 3 x 6
See the exploded view
3-831-441-XX
Sheet (t 0.5)
Ornament, counter
1-516-898-00
Switch, rotary; NOISE BLANKER (S14)
1-224-820-00
Resistor, variable; 20 kΩ;
RF GAIN (VR1401)
3-880-542-00
Button, BAND SELECTOR
P 3 x 6
9-911-863-XX
Fiber, insulation (t 0.5)
P 3 x 6
1-584-665-00
Printed Circuit Board, filter
TA, P 3 x 8
3-831-441-XX
Sheet (t 0.5)
Bracket, printed circuit board
P 3 x 6
P 3 x 6 71
TA, P 3 x 8
Bracket, RF GAIN
TA, P 3 x 8
Supplied with rotary switch
P 3 x 6
TA, P 3 x 8
Chassis Ass'y, main
Retainer, circuit board
Lever, power selector
1-224-207-00
Resistor, variable; 20 kΩ,
TREBLE, BASS, VOLUME
(VR501, 502, 503)
Printed Circuit Board, volume
TA, P 3 x 8
3-831-441-XX
Sheet (t 0.5)
Supplied with variable resistor
CNP2
CNJ2 (4 p)
CNJ3 (6 p)
CNP3
TA, P 3 x 8
1-514-533-XX
Switch, micro; BATT CHECK, LIGHT (S18, 19)
Bracket, variable resistor/rotary switch
Reinforcement, timer switch
CNJ28 (6 p)
1-516-624-00
Switch, slide; TIMER ON
(S17)
CNP28 (6 p)
Printed Circuit Board, AUTO switch
9-911-863-XX
Fiber, insulation (t 0.5)
3-880-597-00
Shaft, power selector
3-645-086-00
Spring
Steel Ball, 4 mm dia.
3-845-378-00
Spring
Retainer, 4 mm dia.
Chassis, power selector
Shield Plate, VCO


A
B
C
D
E
1
2
3
(5)
1-508-795-00
Connector Pin, CNP 6 ~ 8 (12p)
Printed Circuit Board, counter (B)
3-880-612-00
Nut
CNP6
CNP7
CNP8
3-831-441-XX
Sheet (t0.5)
CNP13 ~ 15 (2p)
1-508-694-00
CNP16 (8p)
3-831-441-XX
Sheet (t0.5)
Shield Case, counter (B)
CNJ17 (10p)
CNJ18 (12p)
Screw-shaft
Printed Circuit Board, counter (A)
CNP17 (10p)
CNP18, 19 (6p)
Shield Case, counter (A)
N 3
CNJ13 ~ 15 (2p)
CNJ16 (8p)
1-516-965-00
Switch, rotary; SW BAND SELECTOR: 10 MHz step
1-516-892-00
Switch, rotary; SW BAND SELECTOR: 1 MHz step (S27 ~ 29) (S26)
Supplied with switch
Supplied with switch
Bracket, counter switch
TA, P 3 x 8
Shield Case Ass'y, counter (C)
P 3 x 6
9-911-863-XX
Fiber (t0.5)
CNJ4 (10p)
CNP4 (10p)
CNJ5 (5p)
P 3 x 6
CNP5
1-507-369-00
Jack, 5 unit (J501 – 505)
Printed Circuit Board, jack
Retainer, circuit board
Lug, 3 mm dia.
P 3 x 6
Printed Circuit Board, audio amp
1-508-699-00
Connector Pin, CNP9, 10 (8p)
CNJ10 (8p)
CNJ11 (12p)
CNP11, 12 (6p)
Printed Circuit Board, MODE switch
1-516-895-00
Switch, pushbutton; 5-key; MODE (S8 – 12)
9-911-853-XX
Cushion (t 10)
3-427-542-00
Stopper
1-507-440-00 103
Jack; HEADPHONES (J1401)
B 3 x 6
Printed Circuit Board, function switch
1-516-898-XX
Switch, rotary; FUNCTION (S2003)
Bracket, select switch
Reinforcement, main chassis
TA, P 3 x 8
P 3 x 6
Supplied with jack
P 3 x 6
P 3 x 6
TA, P 3 x 6
Supplied with switch
1-516-898-00
Switch, rotary; AFC; MUTING (S15 – 16)
Bracket, AFC
Supplied with switch
TA, P 3 x 8
9-911-837-XX
Sheet (t 1)
9-911-853-XX
Cushion (t 10)
P 3 x 6
9-911-815-02
Cushion (t5)
3-427-542-00
Stopper
Chassis Ass'y, main
TA, P 3 x 8
Bracket, L-shaped, SW dial
3-831-441-XX
Sheet (t0.5)
3-831-441-XX
Sheet (t0.5)
9-911-840-XX
Sheet, rubber (t3)
3-831-441-XX
Sheet (t0.5)
B 3 x 10
Escutcheon, band selector
*A
3-831-441-XX
Sheet (t0.5)
*B
*D
3-834-636-00
Pulley
*E
1-151-266-XX
Capacitor, variable; ANTENNA TUNING (CV101)
Rivet, R2 x 8
P 3 x 6
*O
*C
*A
3-831-441-XX
Sheet (t0.5)
*F
*G
P 2.6 x 5
*H
TA, P 3 x 8
*L
*M
*N
3-820-620-00
Spring, click
Rivet, R 2 x 8
TA, P 3 x 8
P 2.6 x 5
Eyelet
*D
3-834-636-00
Pulley
*K
1-516-893-00
Switch, micro; SW ant coil select
*J
9-911-825-32
Cord, dial; 0.3 mm dia.
*I
3-530-249-XX
Spring (5T)
A-3624-022-A
Antenna Tuning Block Ass'y; including parts marked *A ~ O

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A B C

(6)

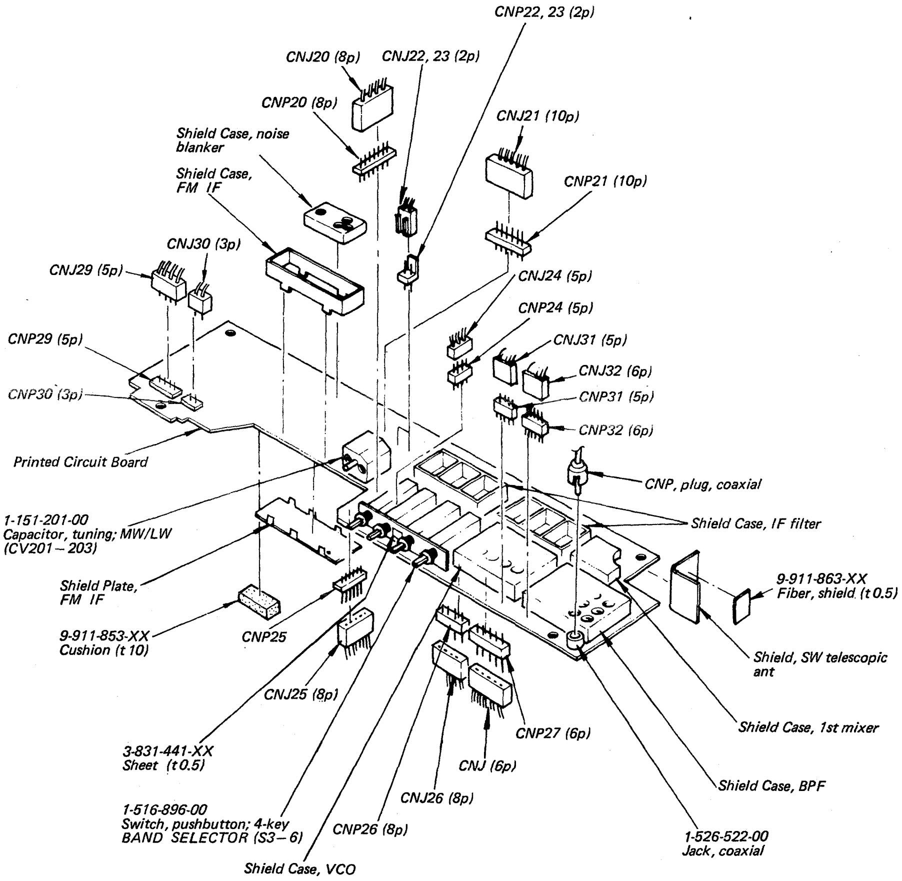
1

2

3

4

5


CNP22, 23 (2p)
CNJ20 (8p)
CNJ22, 23 (2p)
CNP20 (8p)
CNJ21 (10p)
Shield Case, noise blanker
Shield Case, FM IF
CNP21 (10p)
CNJ30 (3p)
CNJ29 (5p)
CNJ24 (5p)
CNP24 (5p)
CNP29 (5p)
CNJ31 (5p)
CNJ32 (6p)
CNP30 (3p)
CNP31 (5p)
CNP32 (6p)
Printed Circuit Board
CNP, plug, coaxial
1-151-201-00
Capacitor, tuning; MW/LW
(CV201 – 203)
Shield Case, IF filter
Shield Plate, FM IF
9-911-863-XX
Fiber, shield (t 0.5)
9-911-853-XX
Cushion (t 10)
CNP25
Shield, SW telescopic ant
CNJ25 (8p)
Shield Case, 1st mixer
CNP27 (6p)
3-831-441-XX
Sheet (t 0.5)
CNJ (6p)
Shield Case, BPF
CNJ26 (8p)
1-516-896-00
Switch, pushbutton; 4-key
BAND SELECTOR (S3 – 6)
CNP26 (8p)
1-526-522-00
Jack, coaxial
Shield Case, VCO

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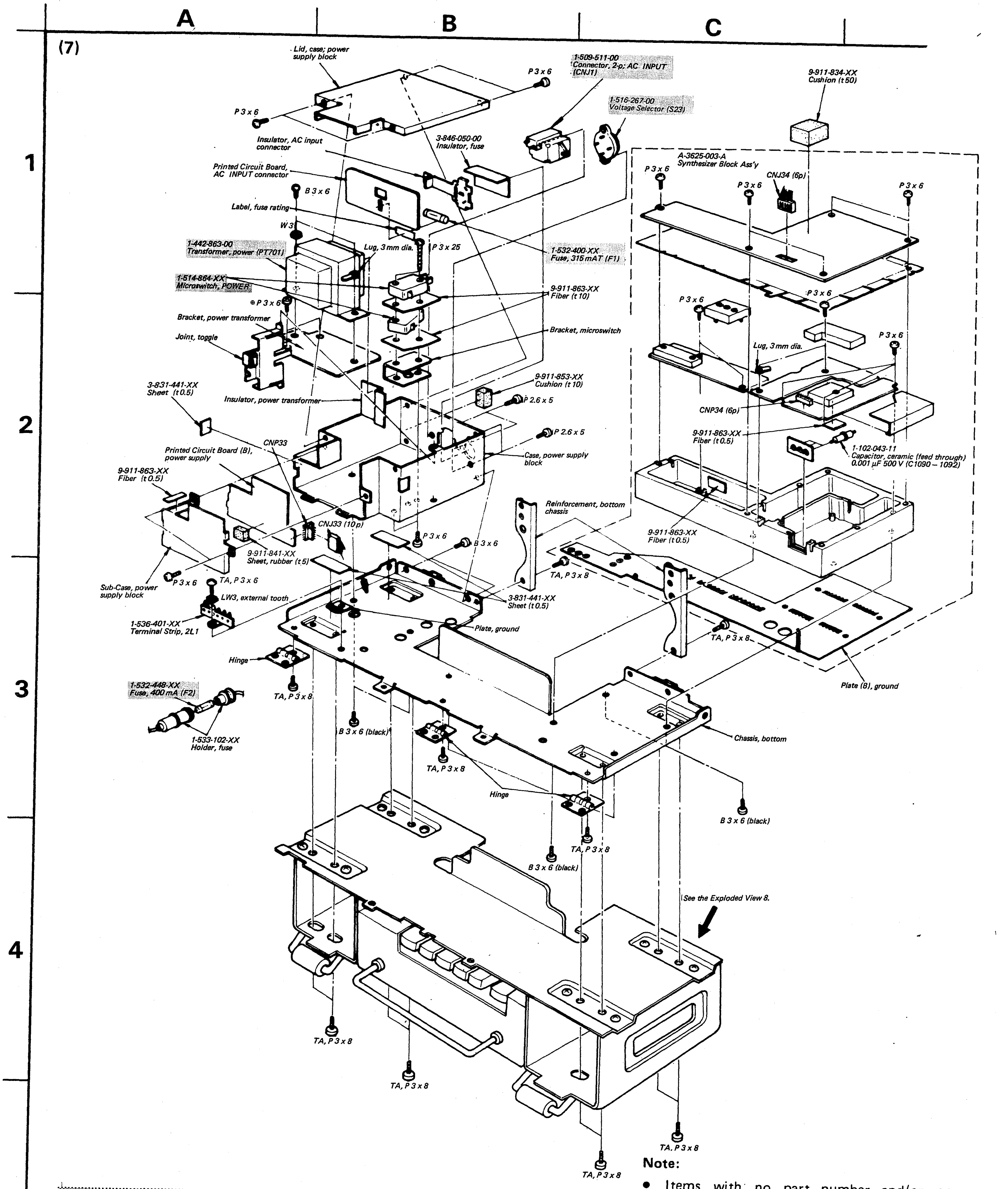
  (–) = slotted head
- (□□T) shows the number of coils in spring.


A
B
C
1
2
3
4
5
(7)
Lid, case; power supply block
P 3 x 6
P 3 x 6
1-509-511-00
Connector, 2-p; AC INPUT (CNJ1)
1-516-267-00
Voltage Selector (S23)
9-911-834-XX
Cushion (t 50)
Insulator, AC input connector
3-846-050-00
Insulator, fuse
Printed Circuit Board, AC INPUT connector
B 3 x 6
Label, fuse rating
W 3
1-442-863-00
Transformer, power (PT701)
Lug, 3 mm dia.
P 3 x 25
1-532-400-XX
Fuse, 315 mAT (F1)
1-514-864-XX
Microswitch, POWER
⊕ P 3 x 6
9-911-863-XX
Fiber (t 10)
Bracket, power transformer
Joint, toggle
Bracket, microswitch
A-3625-003-A
Synthesizer Block Ass'y
P 3 x 6
CNJ34 (6p)
P 3 x 6
P 3 x 6
P 3 x 6
P 3 x 6
P 3 x 6
Lug, 3 mm dia.
CNP34 (6p)
9-911-863-XX
Fiber (t 0.5)
1-102-043-11
Capacitor, ceramic (feed through) 0.001 μF 500 V (C1090 – 1092)
3-831-441-XX
Sheet (t 0.5)
Insulator, power transformer
9-911-853-XX
Cushion (t 10)
P 2.6 x 5
P 2.6 x 5
Case, power supply block
CNP33
Printed Circuit Board (B), power supply
9-911-863-XX
Fiber (t 0.5)
CNJ33 (10 p)
9-911-841-XX
Sheet, rubber (t 5)
P 3 x 6
B 3 x 6
Reinforcement, bottom chassis
9-911-863-XX
Fiber (t 0.5)
Sub-Case, power supply block
P 3 x 6
TA, P 3 x 6
LW3, external tooth
1-536-401-XX
Terminal Strip, 2L1
TA, P 3 x 8
3-831-441-XX
Sheet (t 0.5)
Plate, ground
TA, P 3 x 8
Hinge
TA, P 3 x 8
Plate (B), ground
1-532-448-XX
Fuse, 400 mA (F2)
1-533-102-XX
Holder, fuse
B 3 x 6 (black)
Chassis, bottom
TA, P 3 x 8
Hinge
B 3 x 6 (black)
TA, P 3 x 8
B 3 x 6 (black)
See the Exploded View 8.
TA, P 3 x 8
TA, P 3 x 8
TA, P 3 x 8
TA, P 3 x 8

Note: The components identified by shading are critical for safety. Replace only with part number specified.

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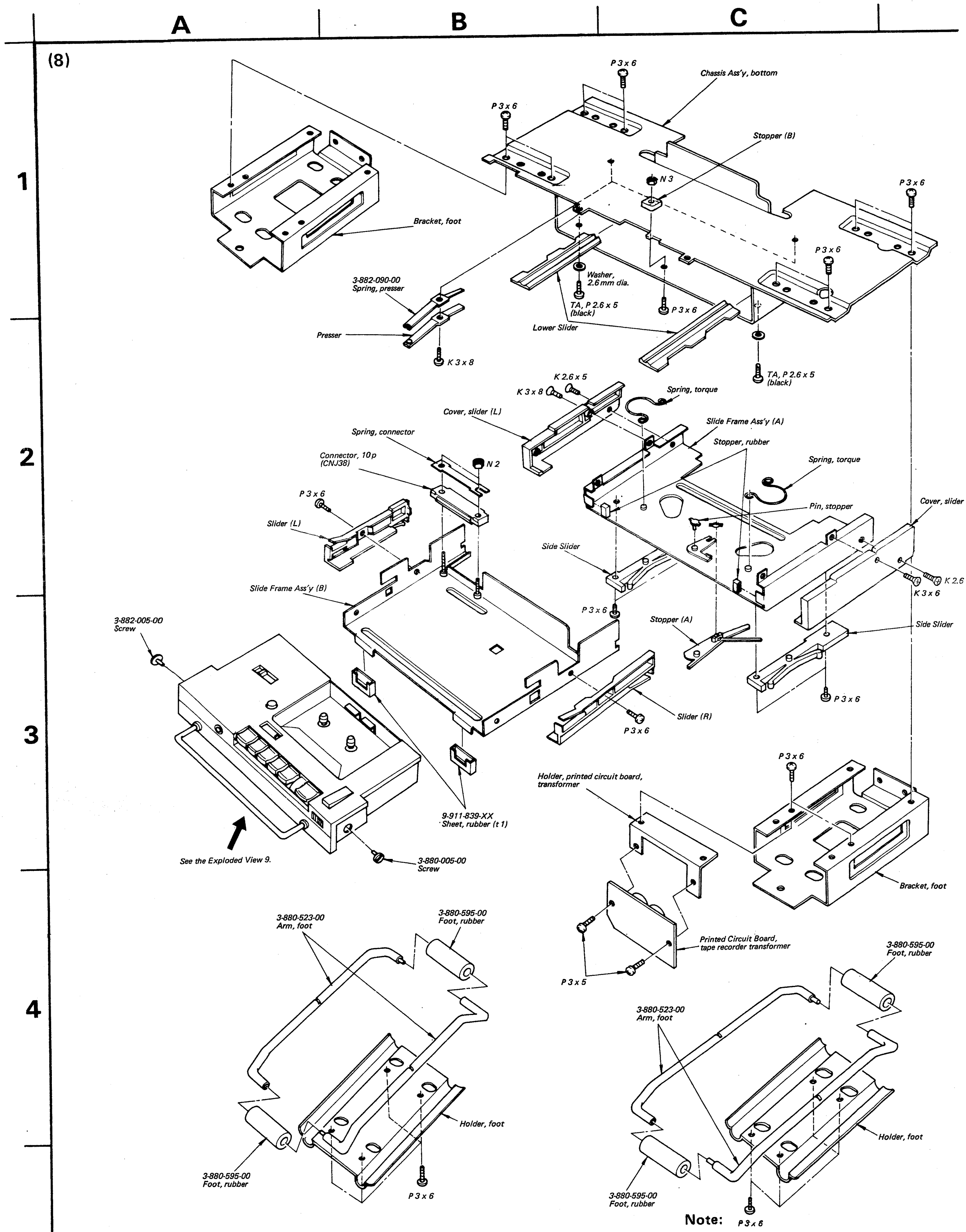

A
B
C
1
2
3
4
(8)
P 3 x 6
Chassis Ass'y, bottom
P 3 x 6
Stopper (B)
N 3
P 3 x 6
Bracket, foot
P 3 x 6
3-882-090-00
Spring, presser
Washer, 2.6 mm dia.
TA, P 2.6 x 5 (black)
P 3 x 6
Presser
Lower Slider
K 3 x 8
TA, P 2.6 x 5 (black)
K 2.6 x 5
K 3 x 8
Spring, torque
Cover, slider (L)
Slide Frame Ass'y (A)
Spring, connector
Stopper, rubber
N 2
Connector, 10p (CNJ38)
Spring, torque
P 3 x 6
Pin, stopper
Cover, slider (R)
Slider (L)
Side Slider
K 2.6 x 5
K 3 x 6
Slide Frame Ass'y (B)
P 3 x 6
3-882-005-00
Screw
Stopper (A)
Side Slider
Slider (R)
P 3 x 6
P 3 x 6
P 3 x 6
Holder, printed circuit board, transformer
9-911-839-XX
Sheet, rubber (t 1)
See the Exploded View 9.
3-880-005-00
Screw
Bracket, foot
3-880-523-00
Arm, foot
3-880-595-00
Foot, rubber
Printed Circuit Board, tape recorder transformer
3-880-595-00
Foot, rubber
P 3 x 5
3-880-523-00
Arm, foot
Holder, foot
Holder, foot
3-880-595-00
Foot, rubber
P 3 x 6
3-880-595-00
Foot, rubber
P 3 x 6

5

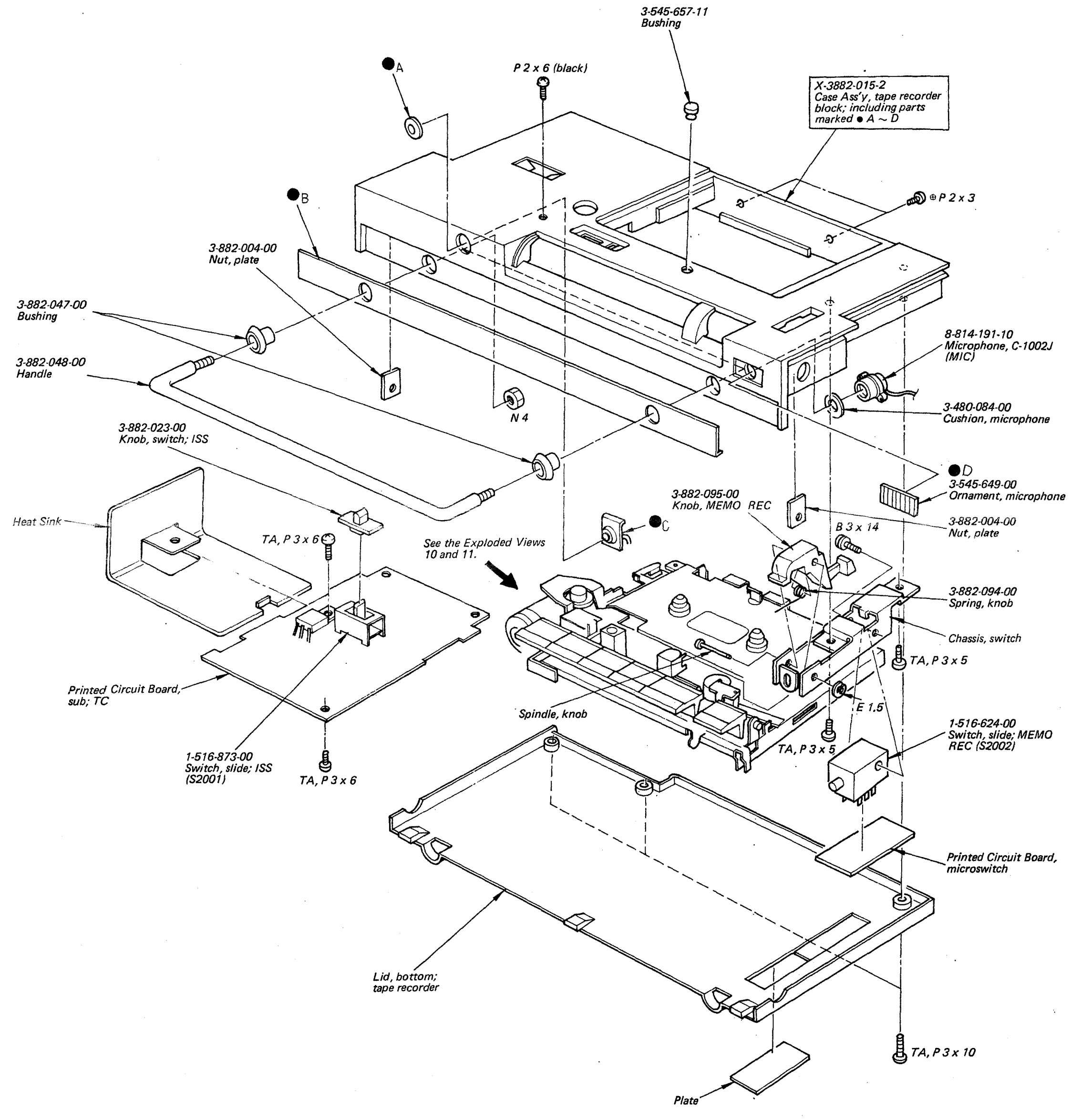
Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.

A B C

1 2 3 4 5

(9)


●A
P 2 x 6 (black)
3-545-657-11
Bushing
X-3882-015-2
Case Ass'y, tape recorder block; including parts marked ● A ~ D
⊕P 2 x 3
●B
3-882-004-00
Nut, plate
3-882-047-00
Bushing
3-882-048-00
Handle
N 4
8-814-191-10
Microphone, C-1002J (MIC)
3-480-084-00
Cushion, microphone
3-882-023-00
Knob, switch; ISS
●D
3-545-649-00
Ornament, microphone
3-882-095-00
Knob, MEMO REC
●C
3-882-004-00
Nut, plate
Heat Sink
TA, P 3 x 6
See the Exploded Views 10 and 11.
B 3 x 14
3-882-094-00
Spring, knob
Chassis, switch
TA, P 3 x 5
E 1.5
Printed Circuit Board, sub; TC
Spindle, knob
1-516-624-00
Switch, slide; MEMO REC (S2002)
TA, P 3 x 5
1-516-873-00
Switch, slide; ISS (S2001)
TA, P 3 x 6
Printed Circuit Board, microswitch
Lid, bottom; tape recorder
TA, P 3 x 10
Plate

Note:

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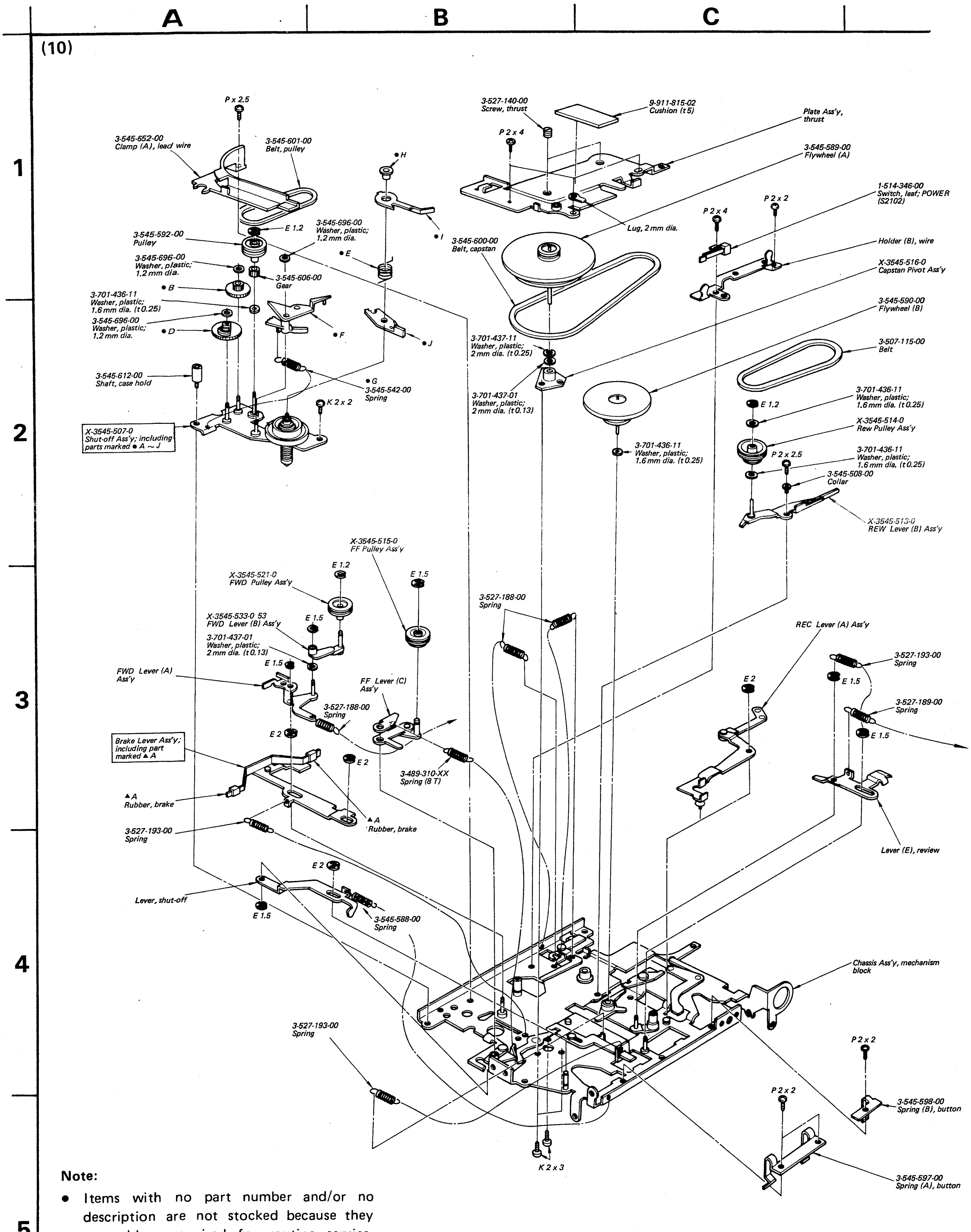
A
B
C
1
2
3
4
5
(10)
P x 2.5
3-545-652-00
Clamp (A), lead wire
3-545-601-00
Belt, pulley
● H
● I
3-545-592-00
Pulley
E 1.2
3-545-696-00
Washer, plastic;
1.2 mm dia.
● E
3-545-696-00
Washer, plastic;
1.2 mm dia.
3-545-606-00
Gear
● B
3-701-436-11
Washer, plastic;
1.6 mm dia. (t 0.25)
3-545-696-00
Washer, plastic;
1.2 mm dia.
● D
● F
● J
3-545-612-00
Shaft, case hold
● G
3-545-542-00
Spring
K 2 x 2
X-3545-507-0
Shut-off Ass'y; including
parts marked ● A ~ J
3-527-140-00
Screw, thrust
9-911-815-02
Cushion (t 5)
P 2 x 4
Plate Ass'y,
thrust
3-545-589-00
Flywheel (A)
Lug, 2 mm dia.
3-545-600-00
Belt, capstan
1-514-346-00
Switch, leaf; POWER
(S2102)
P 2 x 4
P 2 x 2
Holder (B), wire
X-3545-516-0
Capstan Pivot Ass'y
3-545-590-00
Flywheel (B)
3-701-437-11
Washer, plastic;
2 mm dia. (t 0.25)
3-507-115-00
Belt
3-701-437-01
Washer, plastic;
2 mm dia. (t 0.13)
3-701-436-11
Washer, plastic;
1.6 mm dia. (t 0.25)
E 1.2
3-701-436-11
Washer, plastic;
1.6 mm dia. (t 0.25)
X-3545-514-0
Rew Pulley Ass'y
P 2 x 2.5
3-701-436-11
Washer, plastic;
1.6 mm dia. (t 0.25)
3-545-508-00
Collar
X-3545-513-0
REW Lever (B) Ass'y
X-3545-515-0
FF Pulley Ass'y
E 1.2
E 1.5
X-3545-521-0
FWD Pulley Ass'y
X-3545-533-0 53
FWD Lever (B) Ass'y
E 1.5
3-701-437-01
Washer, plastic;
2 mm dia. (t 0.13)
E 1.5
FWD Lever (A)
Ass'y
FF Lever (C)
Ass'y
3-527-188-00
Spring
3-527-188-00
Spring
E 2
Brake Lever Ass'y;
including part
marked ▲ A
E 2
3-489-310-XX
Spring (8 T)
▲ A
Rubber, brake
▲ A
Rubber, brake
3-527-193-00
Spring
E 2
Lever, shut-off
E 1.5
3-545-588-00
Spring
REC Lever (A) Ass'y
3-527-193-00
Spring
E 2
E 1.5
3-527-189-00
Spring
E 1.5
Lever (E), review
Chassis Ass'y, mechanism
block
3-527-193-00
Spring
P 2 x 2
P 2 x 2
3-545-598-00
Spring (B), button
3-545-597-00
Spring (A), button
K 2 x 3

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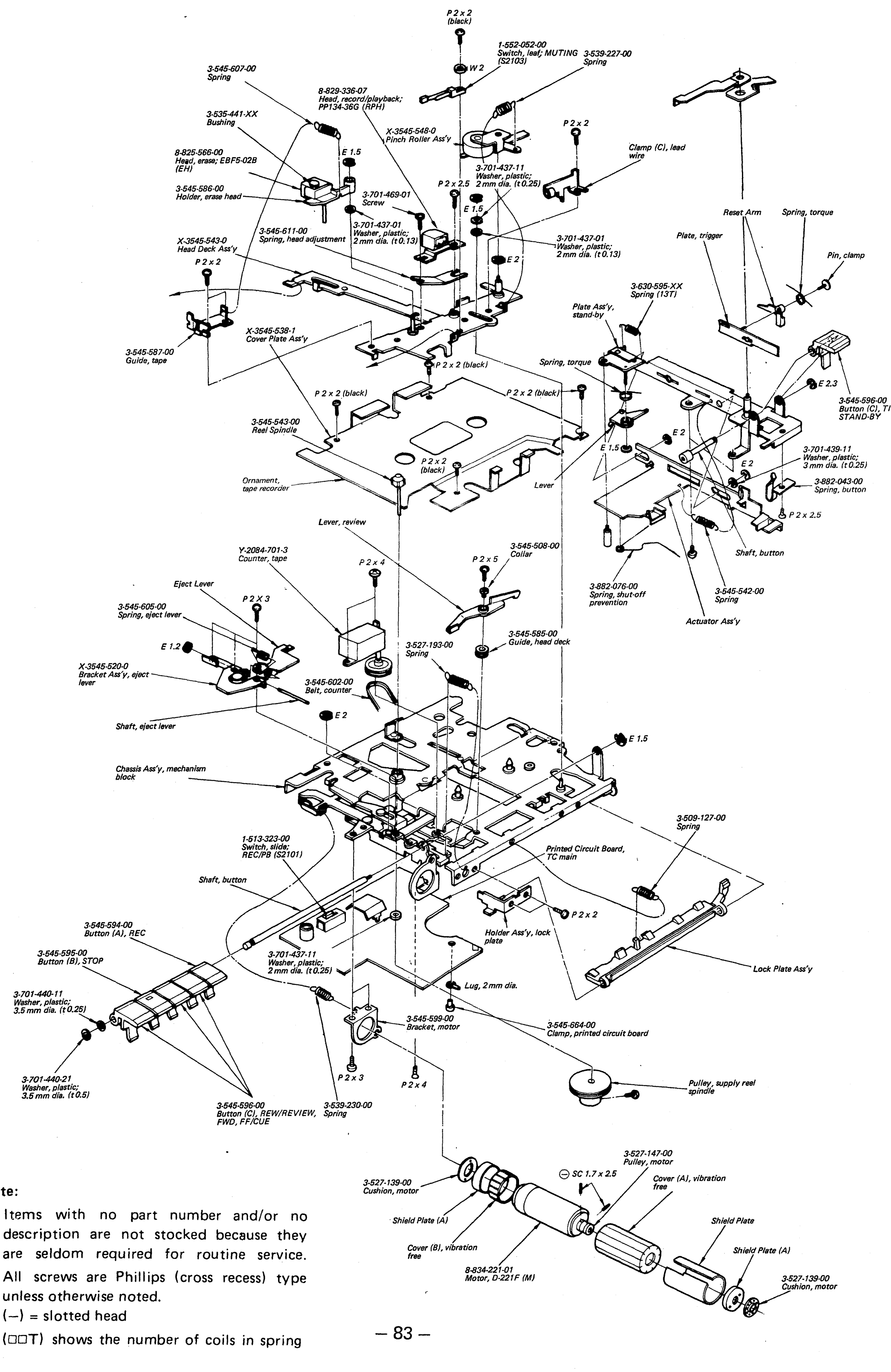
(11)


A
B
C
1
2
3
4
5
P 2 x 2 (black)
1-552-052-00 Switch, leaf; MUTING (S2103)
3-539-227-00 Spring
W 2
3-545-607-00 Spring
8-829-336-07 Head, record/playback; PP134-36G (RPH)
3-535-441-XX Bushing
X-3545-548-0 Pinch Roller Ass'y
P 2 x 2
8-825-566-00 Head, erase; EBF5-02B (EH)
E 1.5
3-701-437-11 Washer, plastic; 2 mm dia. (t 0.25)
Clamp (C), lead wire
3-545-586-00 Holder, erase head
P 2 x 2.5
3-701-469-01 Screw
E 1.5
3-701-437-01 Washer, plastic; 2 mm dia. (t 0.13)
3-545-611-00 Spring, head adjustment
3-701-437-01 Washer, plastic; 2 mm dia. (t 0.13)
X-3545-543-0 Head Deck Ass'y
E 2
P 2 x 2
Reset Arm
Spring, torque
Plate, trigger
Pin, clamp
3-630-595-XX Spring (13T)
Plate Ass'y, stand-by
3-545-587-00 Guide, tape
X-3545-538-1 Cover Plate Ass'y
P 2 x 2 (black)
Spring, torque
E 2.3
P 2 x 2 (black)
P 2 x 2 (black)
3-545-596-00 Button (C), TIMER STAND-BY
3-545-543-00 Reel Spindle
E 2
E 1.5
3-701-439-11 Washer, plastic; 3 mm dia. (t 0.25)
P 2 x 2 (black)
E 2
3-882-043-00 Spring, button
Ornament, tape recorder
Lever
P 2 x 2.5
Lever, review
3-545-508-00 Collar
Shaft, button
Y-2084-701-3 Counter, tape
P 2 x 4
P 2 x 5
3-882-076-00 Spring, shut-off prevention
3-545-542-00 Spring
Eject Lever
P 2 X 3
3-545-605-00 Spring, eject lever
Actuator Ass'y
E 1.2
3-545-585-00 Guide, head deck
3-527-193-00 Spring
X-3545-520-0 Bracket Ass'y, eject lever
3-545-602-00 Belt, counter
Shaft, eject lever
E 2
E 1.5
Chassis Ass'y, mechanism block
3-509-127-00 Spring
1-513-323-00 Switch, slide; REC/PB (S2101)
Printed Circuit Board, TC main
Shaft, button
P 2 x 2
Holder Ass'y, lock plate
3-545-594-00 Button (A), REC
3-545-595-00 Button (B), STOP
3-701-437-11 Washer, plastic; 2 mm dia. (t 0.25)
Lock Plate Ass'y
Lug, 2 mm dia.
3-701-440-11 Washer, plastic; 3.5 mm dia. (t 0.25)
3-545-599-00 Bracket, motor
3-545-664-00 Clamp, printed circuit board
P 2 x 3
P 2 x 4
Pulley, supply reel spindle
3-701-440-21 Washer, plastic; 3.5 mm dia. (t 0.5)
3-545-596-00 Button (C), REW/REVIEW, FWD, FF/CUE
3-539-230-00 Spring
3-527-147-00 Pulley, motor
⊖ SC 1.7 x 2.5
Cover (A), vibration free
3-527-139-00 Cushion, motor
Shield Plate (A)
Shield Plate
Shield Plate (A)
Cover (B), vibration free
8-834-221-01 Motor, D-221F (M)
3-527-139-00 Cushion, motor

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  (–) = slotted head
- (□□T) shows the number of coils in spring

SECTION 6

ELECTRICAL PARTS LIST

SEMICONDUCTORS

Transistors

Ref. No.	*Part No.*	*Description*
Q001		2SK42-1
Q002		2SK23A-840
Q003		2SC710
Q051		2SK42-1
Q052		2SK23A-840
Q053		2SC710
Q054		2SK23A-860
Q201		3SK37
Q202, 203		2SK23A-840
Q204		3SK37
Q205, 206		2SK23A-840
Q207 – 209		2SC710
Q210, 211		2SC710-14
Q212		2SC710-15
Q213, 214		2SC710
Q216		2SC634A
Q217		2SA678
Q218 – 221		2SC634A
Q222		2SC710-14
Q223		2SC710
Q224		2SK42-1
Q225, 226		2SC1129
Q227		3SK37
Q228		2SA634A
Q229		2SA684
Q230		2SC634A
Q231		2SA678
Q401		2SC632A
Q501		2SC634A
Q601		2SC634A
Q602, 603		2SC1429-□5
Q604		2SC634A
Q701		2SA678
Q702		2SA684
Q703 – 706		2SC634A
Q801 – 803		2SC710-14
Q804		2SC634A
Q805, 806		2SC1364
Q901,		2SK42-1
Q902, 903		2SK23A-824
Q1001, 1002		3SK37
Q1003, 1004		2SC710
Q1006		2SK23A-825
Q1007 – 1012		2SC634A
Q1013 – 1018		2SC710
Q1019, 1020		2SC641K
Q1021, 1022		2SC710
Q1023, 1024		2SC634A
Q1025, 1201		2SK23A-824
Q1202, 1203		2SC710
Q1204 – 1212		2SC1364
Q1213 – 1216		2SA678
Q2001		2SD1061
Q2002 – 2005		2SC634A
Q2101, 2102		2SC632A
Q2103, 2104		2SC634A
Q2105		2SA678
Q2106, 2107		2SC634A
Q2108		2SC1474

ICs

Ref. No.	*Part No.*	*Description*
IC801, 802		CX075B
IC1001		TA7060P
IC1002		SN74S113DC
IC1003, 1004		SN74162N
IC1005		μPC1008C
IC1006		HD74LS00P
IC1007		TA7060P
IC1201		34013PC
IC1202		MSM505
IC1203		MSM551H
IC1204		MSM530
IC1205 – 1207		MSM5503
IC1208 – 1210		MSM561
IC2101		CX170
IC2102		BX295A

Ref. No.	*Part No.*	*Description*
	Diodes	
D001, 051		1S2687S-2
D201 – 209 D211 – 215		1S1555
D216		1T23S
D217 – 219		1S1555
D220, 221		1T23S
D223, 225		1S1555
D226, 227		1T18-0
D228 – 234		1S2222
D235		1T261
D236		RD6A
D237 – 241 D401		1S1555
D601, 602		VD1120
D701		2SB324
D702		RD5A
D703, 704		10E2
D801, 802		1T261
D803 – 807		1S1555
D1001, 1002		1T261
D1003, 1004 D1201 – 1204		1S1555
D2001, 2002		1S1555
D2003		TLR109 (LED)
D2004 D2101 – 2105		1S1555
	Thermistor	
Th701	1-800-071-XX	S-300
Th1001	1-800-198-XX	S-1K
Th1002	1-800-194-00	S-90
Th2101	1-800-198-00	S-1K
	COILS	
L001	1-425-909-00	FM Antenna
L002	1-425-910-00	FM RF
L003	1-425-909-00	FM Antenna
L004	1-405-750-00	FM Osc
L051	1-425-929-00	Coil
L052	1-425-930-00	Coil
L053	1-425-929-00	Coil
L054	1-405-527-21	FM Osc
L201	1-407-178-XX	Microinductor, 1 μH
L210, 215	1-407-741-00	Microinductor, 18 μH
L224	1-407-864-00	RF BPF
L225	1-407-865-00	RF BPF
L228	1-407-864-00	RF BPF
L231	1-407-862-00	RF BPF
L232	1-407-863-00	RF BPF
L235	1-407-862-00	RF BPF
L261	1-401-665-00	MW/LW Ferrite-rod Antenna
L262	1-425-911-00	MW RF
L263	1-425-444-00	LW RF
L264	1-405-717-00	MW Osc
L265	1-405-716-00	LW Osc
L266	1-417-053-00	VCO Matching Transformer
L267	1-407-178-XX	Microinductor, 1 μH
L268	1-433-184-00	VCO (1)
L269	1-433-185-00	VCO (3)
L270	1-433-188-00	VCO (4)
L271	1-433-189-00	VCO (6)
L272	1-433-190-00	VCO (7)
L273	1-433-186-00	VCO (5)
L274	1-433-187-00	VCO (2)
L275	1-425-912-00	Mixing
L282, 283	1-407-661-XX	Microinductor, 470 μH
L287, 288	1-407-157-XX	Microinductor, 10 μH
L289	1-407-661-XX	Microinductor, 470 μH
L290	1-407-178-XX	Microinductor, 1 μH
L401 – 403	1-407-883-00	Microinductor, 100 mH
L701	1-407-857-00	Choke, 3 mH
L702	1-407-884-00	Choke, 6 mH
L703	1-407-857-00	Choke, 3 mH
L804	1-407-169-XX	Microinductor, 100 μH
L1010	1-407-178-XX	Microinductor, 1 μH
L1016	1-407-169-XX	Microinductor, 100 μH

Note: The components identified by shading are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description
L1021–1023	1-407-856-00	Choke, 1 mH
L1025, 1026	1-407-169-XX	Microinductor, 100 μH
L1201, 1202	1-407-856-00	Choke, 1 mH
L1203	1-407-175-XX	Microinductor, 330 μH
L2011	1-407-175-XX	Microinductor, 330 μH
L2031	1-407-206-XX	Microinductor, 10 mH

TRANSFORMERS

T1	1-433-105-00	Osc
T601	1-423-140-11	Input
FL201	1-403-165-00	Ceramic Filter
FL202A	1-403-888-11	Mechanical Filter
FL202B	1-403-888-21	
FL203A	1-404-024-11	Mechanical Filter
FL203B	1-404-024-21	
IFT001, 051	1-404-031-00	FM IFT
IFT202	1-404-023-00	AM IFT
IFT203	1-403-152-00	AM IFT
IFT204–206	1-404-023-00	AM IFT
IFT207	1-459-153-00	BFO
IFT801	1-403-959-00	FM Discriminator
IFT802	1-403-953-00	FM Discriminator
IFT803	1-403-243-00	FM IFT

CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted.
50WV or less are not indicated except for electrolytics.
pF = μμF, elect = electrolytic

Ref. No.	Part No.	Description		
C001	1-102-956-11	15 p		
C002	1-161-013-11	0.01		(boundary layer)
C003, 004	1-102-960-11	24 p		
C005	1-161-013-11	0.01		(boundary layer)
C006	1-102-972-11	91 p		
C009	1-161-013-11	0.01		(boundary layer)
C011	1-102-870-11	8 p		
C012	1-102-947-11	10 p		
C013	1-102-870-11	8 p		
C014	1-161-013-11	0.01		(boundary layer)
C015	1-127-019-11	0.1	16 V	solid aluminum
C016	1-121-651-11	10	16 V	elect
C051	1-102-949-11	12 p		
C052	1-161-013-11	0.01		(boundary layer)
C053, 054	1-102-953-11	18 p		
C055	1-161-013-11	0.01		(boundary layer)
C056	1-102-972-11	91 p		
C059	1-161-013-11	0.01		(boundary layer)
C061	1-102-858-11	10 p		
C062	1-102-944-11	7 p		
C063	1-102-663-11	8 p		
C065	1-127-019-11	0.1	16 V	solid aluminum
C066	1-121-651-11	10	16 V	elect
C067	1-101-978-11	10 p		
C100	1-103-733-11	0.0022	50 V	polystyrol
C101	1-103-729-11	0.0015	50 V	polystyrol
C102	1-103-728-11	0.0013	50 V	polystyrol
C103	1-107-082-11	75 p		silvered mica
C105	1-101-882-11	51 p		
C106	1-102-946-11	9 p		
C107	1-102-975-11	100 p		
C201–203	1-101-118-11	0.01		
C204	1-101-361-11	150 p		
C205	1-107-082-11	75 p		silvered mica
				silvered mica
C206	1-107-068-11	20 p		silvered mica
C207–209	1-161-013-11	0.01		(boundary layer)
C210	1-102-979-11	240 p		
C211	1-107-081-11	68 p		silvered mica
C212	1-107-102-11	5 p		silvered mica
C213	1-101-367-11	160 p		silvered mica
C214	1-121-651-11	10	16 V	elect
C215	1-161-013-11	0.01		(boundary layer)
C216	1-107-079-11	56 p		silvered mica
C217	1-161-013-11	0.01		(boundary layer)
C218	1-107-075-11	39 p		silvered mica

Ref. No.	*Part No.*	*Description*		
C219	1-107-086-11	110 p		silvered mica
C220	1-107-072-11	30 p		silvered mica
C221	1-107-086-11	110 p		silvered mica
C222	1-107-075-11	39 p		silvered mica
C223	1-121-651-11	10	16 V	elect
C224	1-107-078-11	51 p		silvered mica
C225	1-161-013-11	0.01		(boundary layer)
C226	1-107-074-11	36 p		silvered mica
C227	1-161-013-11	0.01		(boundary layer)
C228	1-107-067-11	18 p		silvered mica
C229	1-107-081-11	68 p		silvered mica
C230	1-107-066-11	16 p		silvered mica
C231	1-107-081-11	68 p		silvered mica
C232	1-107-067-11	18 p		silvered mica
C233	1-107-071-11	27 p		silvered mica
C234	1-121-651-11	10	16 V	elect
C235	1-161-013-11	0.01		(boundary layer)
C236	1-102-507-11	9 p		
C237	1-161-013-11	0.01		(boundary layer)
C238	1-102-511-11	13 p		
C239	1-102-516-11	27 p		
C240	1-102-510-11	12 p		
C241	1-102-516-11	27 p		
C242	1-102-511-11	13 p		
C243	1-102-501-11	1 p		
C244	1-121-651-11	10	16 V	elect
C245	1-161-013-11	0.01		(boundary layer)
C246	1-102-505-11	6 p		
C247	1-161-013-11	0.01		(boundary layer)
C248	1-102-864-11	5 p		
C249	1-102-514-11	22 p		
C250	1-102-504-11	4 p		
C251	1-102-514-11	22 p		
C252	1-102-864-11	5 p		
C254	1-121-651-11	10	16 V	elect
C255	1-161-013-11	0.01		(boundary layer)
C264	1-107-077-11	47 p		silvered mica
C265	1-102-125-11	0.0047		
C266	1-107-079-11	56 p		silvered mica

Ref. No.	*Part No.*	*Description*		
C267	1-107-078-11	51 p		silvered mica
C268	1-102-074-11	0.001		
C272	1-107-078-11	51 p		silvered mica
C273, 274	1-107-079-11	56 p		silvered mica
C276	1-107-233-11	430 p		silvered mica
C277	1-102-125-11	0.0047		
C278	1-107-078-11	51 p		silvered mica
C280	1-102-944-11	7 p		
C281 – 290	1-101-924-11	0.022		
C284	1-108-239-12	0.01		mylar
C294	1-108-242-12	0.022		mylar
C295	1-101-924-11	0.022		
C296	1-107-079-11	56 p		silvered mica
C297, 298	1-108-239-12	0.01		mylar
C299	1-107-235-11	510 p		silvered mica
C302	1-108-563-12	0.0022		mylar
C303	1-101-924-11	0.022		
C304	1-121-391-11	1	50 V	elect
C305, 306	1-108-244-12	0.033		mylar
C307	1-102-942-11	5 p		
C308	1-102-949-11	12 p		
C309	1-102-679-11	120 p		
C310	1-103-714-11	360 p	50 V	polystyrol
C312	1-102-964-11	36 p		
C313, 314	1-102-947-11	10 p		
C315	1-108-242-12	0.022		mylar
C318	1-121-414-11	100	6.3 V	elect
C319	1-102-125-11	0.0047		
C321	1-102-504-11	4 p		
C322	1-102-751-11	22 p		
C323	1-102-526-11	75 p		
C324	1-101-999-11	10 p		
C325	1-102-755-11	43 p		
C326	1-102-743-11	3 p		
C328	1-102-112-11	330 p		
C329 – 335	1-102-125-11	0.0047		
C337	1-102-505-11	6 p		
C338	1-102-074-11	0.001		
C340	1-102-074-11	0.001		

Ref. No.	Part No.	Description		
C341	1-121-413-11	100	6.3 V	elect
C345	1-101-924-11	0.022		
C346	1-107-235-11	510 p		silvered mica
C350	1-107-071-11	27 p		silvered mica
C351	1-101-924-11	0.022		
C353	1-108-242-12	0.022		mylar
C356, 357	1-108-242-12	0.022		mylar
C358	1-101-924-11	0.022		
C359	1-121-651-11	10	16 V	elect
C360, 361	1-101-924-11	0.022		
C362	1-102-832-11	330 p		
C363	1-121-651-11	10	16 V	elect
C364	1-102-114-11	470 p		
C365	1-127-022-11	0.47	16 V	solid aluminum
C367	1-127-023-11	1	10 V	solid aluminum
C368	1-107-102-11	5 p		silvered mica
C371	1-108-239-12	0.01		mylar
C372	1-108-242-12	0.022		mylar
C373	1-101-924-11	0.022		
C374	1-107-085-11	100 p		silvered mica
C377	1-123-070-11	2200	16 V	elect
C378	1-121-943-11	1000	10 V	elect
C380	1-108-234-12	0.0047		mylar
C383, 384	1-101-924-11	0.022		
C385	1-102-934-11	1 p		
C386	1-102-935-11	2 p		
C387	1-161-013-11	0.01		(boundary layer)
C390	1-127-023-11	1	10 V	solid aluminum
C401	1-127-018-11	0.047	10 V	solid aluminum
C402	1-108-244-12	0.033		mylar
C403	1-121-951-11	0.47	50 V	elect
C404	1-127-019-11	0.1	10 V	solid aluminum
C405	1-127-022-11	0.47	10 V	solid aluminum
C406	1-127-020-11	0.22	10 V	solid aluminum
C407	1-121-415-11	100	16 V	elect
C408	1-102-099-11	0.0015		
C409	1-108-244-12	0.033		mylar
C410	1-161-015-11	0.015		(boundary layer)
C411	1-161-021-11	0.47		(boundary layer)
C412	1-127-019-11	0.1	10 V	solid aluminum
C501	1-127-377-11	0.22	16 V	solid aluminum
C502	1-101-918-11	0.001		
C504	1-121-415-11	100	16 V	elect
C505	1-127-377-11	0.22	16 V	solid aluminum
C506	1-127-018-11	0.0047	10 V	solid aluminum
C507	1-127-378-11	0.68	10 V	solid aluminum
C509	1-127-378-11	0.68	10 V	solid aluminum
C601	1-121-415-11	100	16 V	elect
C602	1-127-377-11	0.22	16 V	solid aluminum
C603	1-102-975-11	100 p		
C604	1-102-074-11	0.001		
C605	1-121-479-11	22	16 V	elect
C606	1-161-015-11	0.015		(boundary layer)
C607	1-161-019-11	0.033		(boundary layer)
C608, 609	1-121-521-11	330	16 V	elect
C610	1-127-203-11	0.33	16 V	solid aluminum
C611, 612	1-121-939-11	470	16 V	elect
C613	1-102-123-11	0.0033		
C614	1-102-119-11	0.0015		
C701	1-123-078-11	2200	6.3 V	elect
C702	1-121-944-11	1000	16 V	elect
C704	1-108-232-12	0.0033		mylar
C705	1-101-923-11	0.01		
C706	1-108-234-12	0.0047		mylar
C707	1-107-093-11	220 p		silvered mica
C708	1-121-944-11	1000	16 V	elect
C709, 710	1-121-660-11	2200	16 V	elect
C711, 712	1-108-381-12	0.022	100 V	mylar
C805	1-121-413-11	100	6.3 V	elect
C810	1-101-924-11	0.022		
C812	1-102-964-11	36 p		
C813	1-101-924-11	0.022		
C814	1-108-234-12	0.0047		mylar
C815	1-121-651-11	10	16 V	elect
C816	1-108-228-12	0.0015		

Note: The components identified by shading are critical for safety. Replace only with part number specified.

Ref. No.	*Part No.*	*Description*		
C817	1-127-022-11	0.47	16 V	solid aluminum
C819	1-102-962-11	30 p		
C823	1-102-940-11	3 p		
C824	1-131-196-11	2.2	20 V	tantalum
C825	1-102-940-11	3 p		
C829	1-127-019-11	0.1	16 V	solid aluminum
C832	1-101-924-11	0.022		
C835	1-121-982-11	470	6.3 V	elect
C836	1-121-426-11	470	16 V	elect
C901	1-102-648-11	43 p		
C902	1-102-672-11	24 p		
C904	1-107-068-11	20 p		silvered mica
C905	1-107-089-11	150 p		silvered mica
C906	1-107-092-11	200 p		silvered mica
C907	1-108-279-12	0.015		mylar
C908	1-107-099-11	2 p		silvered mica
C909	1-107-098-11	1 p		silvered mica
C910	1-108-279-12	0.015		mylar
C911	1-107-071-11	27 p		silvered mica
C912	1-107-085-11	100 p		silvered mica
C913, 914	1-108-279-12	0.015		mylar
C1002	1-102-953-11	18 p		
C1004, 1005	1-107-087-11	120 p		silvered mica
C1007–1009	1-107-097-11	330 p		silvered mica
C1010–1012	1-107-087-11	120 p		silvered mica
C1013	1-102-949-11	12 p		
C1016, 1017	1-107-087-11	120 p		silvered mica
C1018	1-102-949-11	12 p		
C1021, 1022	1-107-087-11	120 p		silvered mica
C1024	1-161-013-XX	0.01		(boundary layer)
C1025, 1026	1-101-923-11	0.01		
C1028	1-101-923-11	0.01		
C1029	1-101-924-11	0.022		
C1030	1-102-506-11	7 p		
C1031	1-102-503-11	3 p		
C1032	1-102-512-11	16 p		
C1033	1-102-503-11	3 p		
C1034	1-102-505-11	6 p		
C1035–1037	1-101-923-11	0.01		
C1038, 1039	1-101-924-11	0.022		
C1040	1-102-864-11	5 p		
C1041	1-102-951-11	15 p		
C1042	1-102-504-11	4 p		
C1043	1-102-948-11	11 p		
C1044	1-102-943-11	6 p		
C1045	1-102-949-11	12 p		
C1046	1-102-503-11	3 p		
C1047	1-161-013-11	0.01		(boundary layer)
C1049	1-101-924-11	0.022		
C1055	1-101-923-11	0.01		
C1059	1-102-121-11	0.0022		
C1060–1065	1-101-923-11	0.01		
C1066	1-102-977-11	200 p		
C1067	1-102-973-11	100 p		
C1068	1-161-021-11	0.0047		(boundary layer)
C1069	1-107-070-11	24 p		silvered mica
C1070	1-102-409-11	30 p		
C1071, 1072	1-102-121-11	0.0022		
C1073	1-121-413-11	100	6.3 V	elect
C1074	1-121-352-11	47	10 V	elect
C1075, 1076	1-131-236-11	1	25 V	tantalum
C1077	1-102-121-11	0.0022		
C1078	1-101-880-11	47 p		
C1079, 1080	1-107-093-11	220 p		silvered mica
C1081	1-102-963-11	33 p		
C1082, 1083	1-103-714-11	360 p		polystyrol
C1084	1-102-963-11	33 p		
C1085, 1086	1-108-555-12	0.001		mylar
C1090–1092	1-102-043-11	0.001	500 V	feed-through
C1094	1-121-391-11	1	50 V	elect
C1095	1-101-880-11	47 p		

Ref. No.	*Part No.*	*Description*		
C1096, 1097	1-121-414-11	100	10 V	elect
C1098	1-107-061-11	10 p		silvered mica
C1099	1-161-013-11	0.01		(boundary layer)
C1100, 1101	1-102-961-11	27 p		
C1102	1-102-977-11	200 p		
C1103	1-101-923-11	0.01		
C1104	1-101-924-11	0.022		
C1105	1-127-019-11	0.1	10 V	solid aluminum
C1106	1-101-919-11	0.0022		
C1107	1-102-043-11	0.001	500 V	feed-through
C1108	1-102-934-11	1 p		
C1201	1-121-424-11	470	6.3 V	elect
C1203	1-131-193-11	10	10 V	tantalum
C1207	1-131-392-11	33	3.15 V	tantalum
C1210	1-101-890-11	75 p		
C1211, 1212	1-108-563-12	0.0022		mylar
C1213	1-127-019-11	0.1	10 V	solid aluminum
C1301	1-121-651-11	10	16 V	elect
C2001	1-121-963-11	33	25 V	elect
C2021	1-121-352-11	47	10 V	elect
C2022	1-121-726-11	0.47	50 V	elect
C2031	1-108-575-12	0.0068		mylar
C2051	1-108-234-12	0.0047		mylar
C2052	1-108-227-12	0.001		mylar
C2110	1-131-387-11	47	6.3 V	tantalum
C2101	1-131-169-11	0.47	10 V	tantalum
C2102	1-131-202-11	1.5	20 V	tantalum
C2103	1-131-380-11	33	10 V	tantalum
C2104	1-105-669-12	0.0047		mylar
C2105	1-161-190-11	0.001		(boundary layer)
C2106	1-105-669-12	0.0047		mylar
C2108	1-107-123-11	47 p		silvered mica
C2109	1-131-170-11	3.3	10 V	tantalum
C2111	1-131-173-11	33	10 V	tantalum
C2112	1-131-202-11	1.5	20 V	tantalum
C2113	1-161-190-11	0.001		(boundary layer)
C2114	1-131-380-11	33	10 V	tantalum
C2115	1-131-387-11	47	6.3 V	tantalum

Ref. No.	*Part No.*	*Description*		
C2116	1-131-375-11	4.7	10 V	tantalum
C2117	1-121-419-11	220	6.3 V	elect
C2118	1-131-368-11	3.3	16 V	tantalum
C2119	1-131-177-11	100	3 V	tantalum
C2120	1-131-244-11	1	6.3 V	tantalum
C2121	1-105-673-12	0.01		mylar
C2122	1-105-719-12	0.033		mylar
C2123	1-105-669-12	0.0047		mylar
C2124	1-131-375-11	4.7	10 V	tantalum
C2125	1-131-170-11	3.3	10 V	tantalum
C2126	1-121-420-11	220	10 V	elect
C2127	1-131-395-11	100	3 V	tantalum
C2128	1-131-377-11	33	10 V	tantalum
C2129	1-161-190-11	0.001		(boundary layer)
C2132	1-161-190-11	0.001		(boundary layer)
C2133	1-131-368-11	3.3	16 V	tantalum
C2134	1-108-249-12	0.068		mylar
	1-161-001-11	0.001		(boundary layer)
CT1001 – 1003	1-141-171-11	Trimmer		
CT201 – 206	1-141-171-XX	Trimmer		
CT207	1-141-138-XX	Trimmer		
CT208	1-141-174-00	Trimmer		
CT209 – 212	1-141-138-XX	Trimmer		
CT901	1-141-175-00	Trimmer		
CV001 – 004	1-151-223-XX	Tuning		
CV051 – 054	1-151-223-11	Tuning		
CV101	1-151-266-XX	Tuning		
CV201 – 203	1-151-201-00	Tuning		

RESISTORS

All resistors are in ohms. Common ¼ W carbon resistors are omitted. Check schematic diagram for values.

R210, 214 R218, 222 R226	1-212-879-11	82	fusible
R235, 239 R244, 321	1-212-881-11	100	fusible

Note: The components identified by shading are critical for safety. Replace only with part number specified.

Ref. No.	*Part No.*	*Description*		
R363	1-212-857-11	10		fusible
R501	1-206-475-11	33	2 W	metal-oxide
R511	1-244-837-11	33	½ W	carbon
R610	1-212-869-11	33	½ W	fusible
R618, 619	1-207-459-11	0.47	½ W	wirewound
R620	1-212-857-11	10		fusible
R714	1-202-723-11	2.2 M	½ W	composition
R836	1-212-869-11	33		fusible
R1267	1-212-941-11	2	½ W	fusible
R2005	1-212-857-11	10		fusible
R2101, 2102	1-209-878-11	1.8 k	1/16 W	carbon
R2103	1-209-781-11	10	1/16 W	carbon
R2108	1-210-381-11	33	1/16 W	carbon
R2112	1-209-768-11	2.2 k	1/16 W	carbon
R2113	1-210-113-11	18 k	1/16 W	carbon
R2114	1-210-371-11	1.6 k	1/16 W	carbon
R2115	1-210-363-11	270	1/16 W	carbon
R2116	1-210-381-11	33 k	1/16 W	carbon
R2119	1-210-363-11	270	1/16 W	carbon
R2121	1-209-768-11	2.2 k	1/16 W	carbon
R2122	1-209-113-11	18 k	1/16 W	carbon
R2123	1-209-774-11	5.1 k	1/16 W	carbon
R2124	1-209-770-11	2.7 k	1/16 W	carbon
R2125	1-210-388-11	68 k	1/16 W	carbon
R2126	1-210-392-11	75	1/16 W	carbon
R2127	1-210-101-11	51	1/16 W	carbon
R2128	1-210-846-11	33	1/16 W	carbon
R2129	1-209-770-11	2.7 k	1/16 W	carbon
R2130	1-209-774-11	5.1 k	1/16 W	carbon
R2131	1-210-111-11	12 k	1/16 W	carbon
R2132	1-209-781-11	10 k	1/16 W	carbon
R2135, 2136	1-210-371-11	1.6 k	1/16 W	carbon
R2137	1-210-102-11	150	1/16 W	carbon
R2142		1.2 k	1/16 W	carbon
R2144	1-210-105-11	560	1/16 W	carbon
VR201	1-224-642-XX	1 k, adjustable; first mixer balance		
VR202	1-224-644-XX	4.7 k, adjustable; blank level		
VR501 503	1-224-207-00	20 k, variable; TREBLE, BASS, VOLUME		

Ref. No.	*Part No.*	*Description*
VR1001	1-224-649-XX	200 k, adjustable; SW spurious beat
VR1401	1-224-820-00	20 k, variable; RF GAIN

SWITCHES

S1	1-514-304-00	Slide, antenna selector
S2	1-516-893-00	Micro, SW antenna coil select
S3 – 6	1-516-896-00	Pushbutton, 4-key; BAND SELECTOR
S8 – 12	1-516-895-00	Pushbutton, 5-key; MODE
S14 – 16	1-516-898-00	Rotary, NOISE BLANKER, AFC, MUTING
S17	1-516-624-00	Slide, TIMER ON
S18 – 20	1-514-533-XX	Micro, BATT CHECK, LIGHT, ZERO SECOND
S21, 22	1-514-864-XX	Micro, POWER
S23	1-516-267-00	Voltage Select
S26	1-516-965-00	Rotary, SW BAND SELECTOR
S27 – 29	1-516-892-00	Rotary, SW BAND SELECTOR
S001	1-552-053-00	Pushbutton, 2-key, FM
S2001	1-516-873-00	Slide, ISS
S2002	1-516-624-00	Slide, MEMO REC
S2003	1-516-898-XX	Rotary, FUNCTION
S2101	1-513-323-00	Slide; REC/PB
S2102	1-514-346-00	Leaf, POWER
S2103	1-552-052-00	Leaf, MUTING

JACKS

J501 – 505	1-507-369-00	Jack, 5-unit; earphone, AUX IN
J1401	1-507-440-00	Jack, HEADPHONES

FUSES

F1	1-532-400-XX	315 mA
F2	1-532-448-XX	400 mA

MISCELLANEOUS

ANT1	1-501-104-00	SW Telescopic Antenna
ANT2	1-501-103-00	FM Telescopic Antenna

Note: The components identified by shading are critical for safety. Replace only with part number specified.

Sony Corporation

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77K0545-2
Printed in Japan

FM/SW/MW/LW
33-BAND RADIO
RECEIVER

CRF-330K

US Model
Serial No. 10201 and later

Canadian Model
E Model
AEP Model

SUPPLEMENT

This supplement updates the service manual to include the production changes in US model and to cover information for Canadian, E and AEP models.
File this supplement with the service manual.

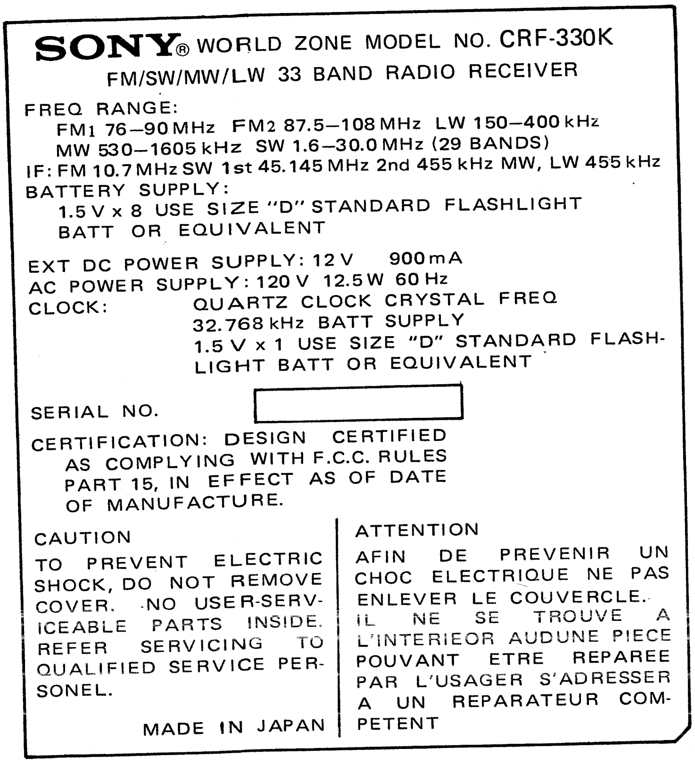
No. 1
October, 1977

SONY
SERVICE MANUAL

1. MODEL IDENTIFICATION

– Specification Label –

USA, Canadian model



SONY® WORLD ZONE MODEL NO. CRF-330K
FM/SW/MW/LW 33 BAND RADIO RECEIVER

FREQ RANGE:
FM1 76–90 MHz FM2 87.5–108 MHz LW 150–400 kHz
MW 530–1605 kHz SW 1.6–30.0 MHz (29 BANDS)
IF: FM 10.7 MHz SW 1st 45.145 MHz 2nd 455 kHz MW, LW 455 kHz
BATTERY SUPPLY:
1.5 V x 8 USE SIZE "D" STANDARD FLASHLIGHT BATT OR EQUIVALENT
EXT DC POWER SUPPLY: 12 V 900 mA
AC POWER SUPPLY: 120 V 12.5 W 60 Hz
CLOCK: QUARTZ CLOCK CRYSTAL FREQ 32.768 kHz BATT SUPPLY 1.5 V x 1 USE SIZE "D" STANDARD FLASHLIGHT BATT OR EQUIVALENT

SERIAL NO.

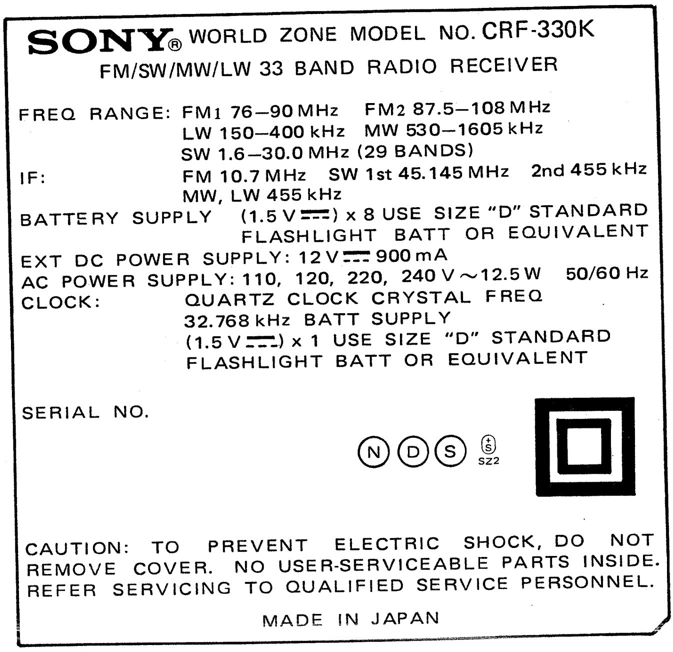
CERTIFICATION: DESIGN CERTIFIED AS COMPLYING WITH F.C.C. RULES PART 15, IN EFFECT AS OF DATE OF MANUFACTURE.

CAUTION
TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONEL.

MADE IN JAPAN

ATTENTION
AFIN DE PREVENIR UN CHOC ELECTRIQUE NE PAS ENLEVER LE COUVERCLE. IL NE SE TROUVE A L'INTERIEOR AUDUNE PIECE POUVANT ETRE REPAREE PAR L'USAGER S'ADRESSER A UN REPARATEUR COMPETENT

AEP model



SONY® WORLD ZONE MODEL NO. CRF-330K
FM/SW/MW/LW 33 BAND RADIO RECEIVER

FREQ RANGE: FM1 76–90 MHz FM2 87.5–108 MHz
LW 150–400 kHz MW 530–1605 kHz
SW 1.6–30.0 MHz (29 BANDS)
IF: FM 10.7 MHz SW 1st 45.145 MHz 2nd 455 kHz
MW, LW 455 kHz
BATTERY SUPPLY (1.5 V ⎓) x 8 USE SIZE "D" STANDARD FLASHLIGHT BATT OR EQUIVALENT
EXT DC POWER SUPPLY: 12 V ⎓ 900 mA
AC POWER SUPPLY: 110, 120, 220, 240 V ～ 12.5 W 50/60 Hz
CLOCK: QUARTZ CLOCK CRYSTAL FREQ 32.768 kHz BATT SUPPLY (1.5 V ⎓) x 1 USE SIZE "D" STANDARD FLASHLIGHT BATT OR EQUIVALENT

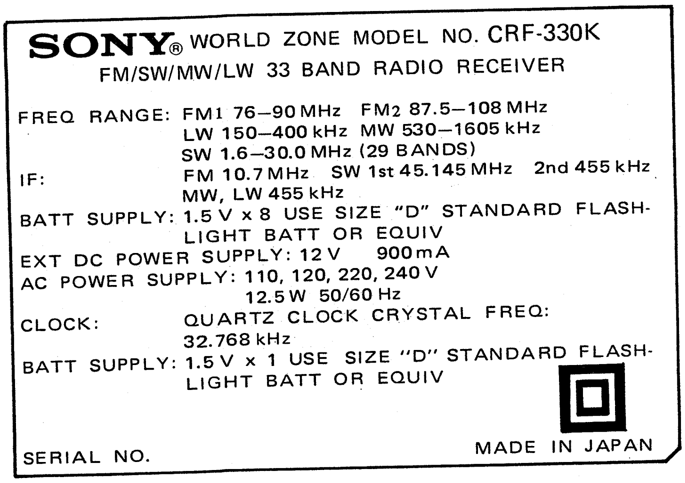
SERIAL NO.

Ⓝ Ⓓ Ⓢ SZ2

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

MADE IN JAPAN

E model



SONY® WORLD ZONE MODEL NO. CRF-330K
FM/SW/MW/LW 33 BAND RADIO RECEIVER

FREQ RANGE: FM1 76–90 MHz FM2 87.5–108 MHz
LW 150–400 kHz MW 530–1605 kHz
SW 1.6–30.0 MHz (29 BANDS)
IF: FM 10.7 MHz SW 1st 45.145 MHz 2nd 455 kHz
MW, LW 455 kHz
BATT SUPPLY: 1.5 V x 8 USE SIZE "D" STANDARD FLASHLIGHT BATT OR EQUIV
EXT DC POWER SUPPLY: 12 V 900 mA
AC POWER SUPPLY: 110, 120, 220, 240 V
12.5 W 50/60 Hz
CLOCK: QUARTZ CLOCK CRYSTAL FREQ: 32.768 kHz
BATT SUPPLY: 1.5 V x 1 USE SIZE "D" STANDARD FLASHLIGHT BATT OR EQUIV

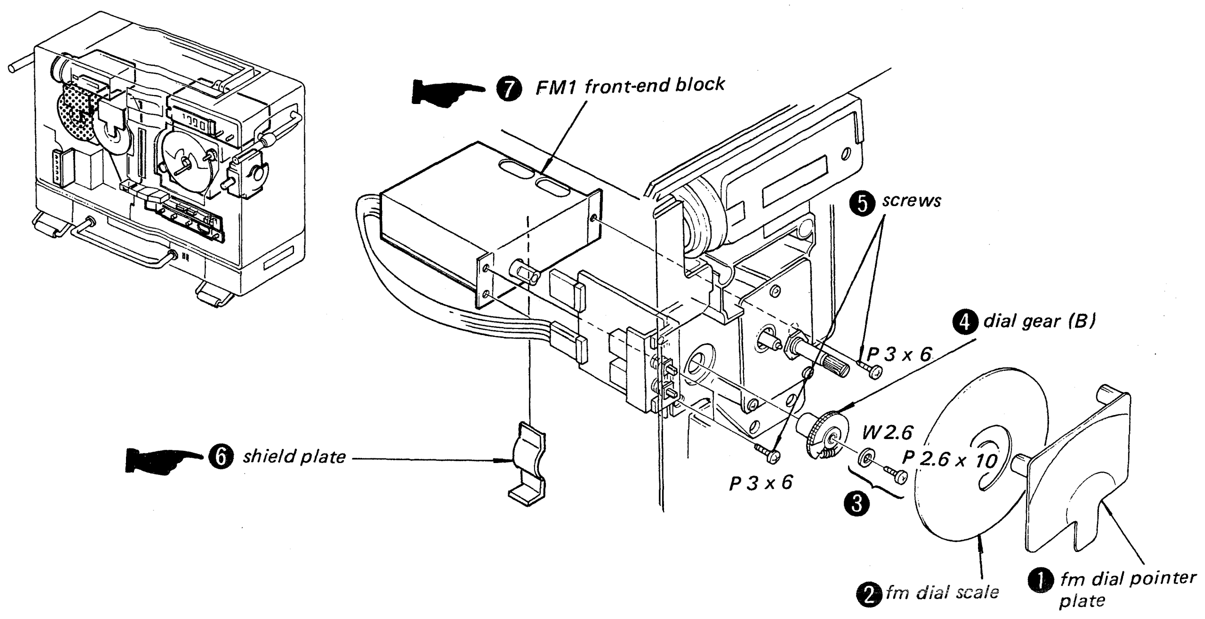
SERIAL NO.

MADE IN JAPAN

2. DISASSEMBLY

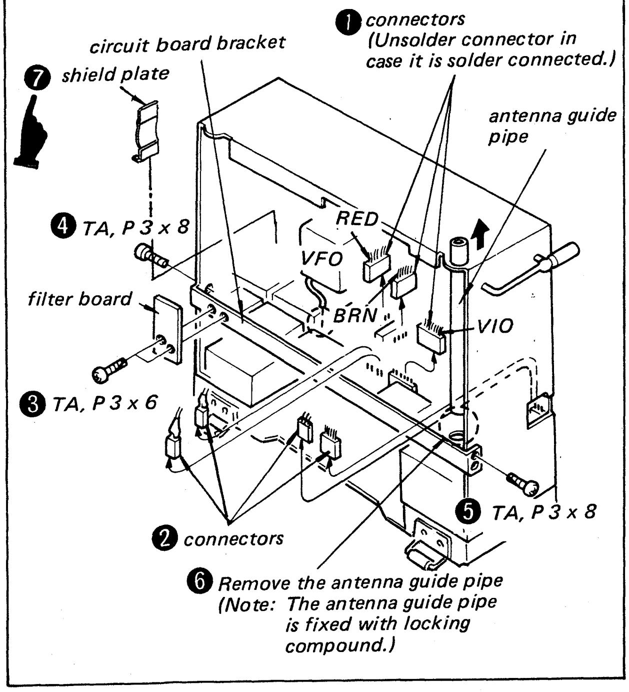
Page 18: ☛ : changed portions

FM1 Front-end Block Removal


☛ ⑦ FM1 front-end block
⑤ screws
④ dial gear (B)
P 3 x 6
W2.6
P 2.6 x 10
P 3 x 6
③
☛ ⑥ shield plate
② fm dial scale
① fm dial pointer plate

Page 28:

Main Board Removal (2)

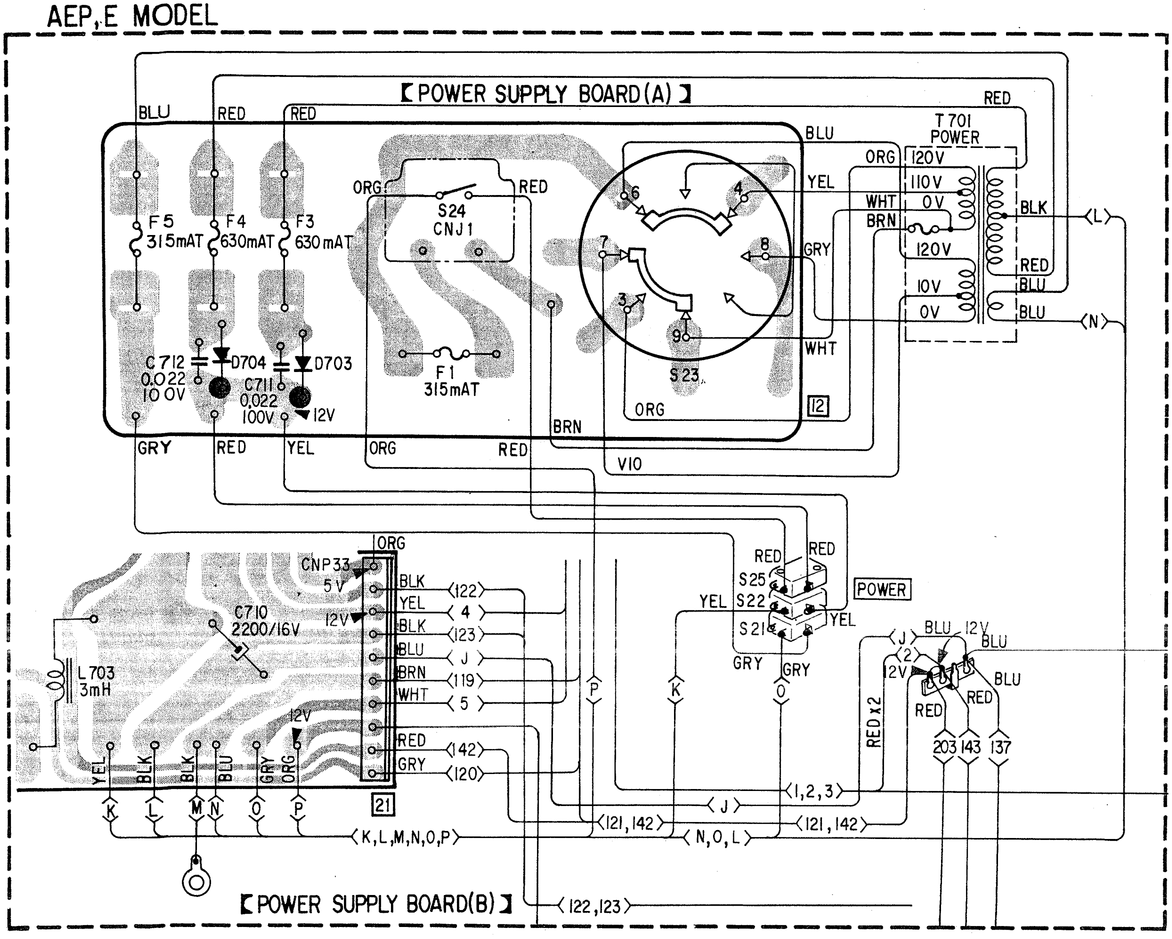

① connectors (Unsolder connector in case it is solder connected.)
circuit board bracket
⑦ shield plate
antenna guide pipe
④ TA, P 3 x 8
RED
VFO
BRN
VIO
filter board
③ TA, P 3 x 6
⑤ TA, P 3 x 8
② connectors
⑥ Remove the antenna guide pipe (Note: The antenna guide pipe is fixed with locking compound.)

3. MOUNTING DIAGRAM

☛ : changed portion

A B C D

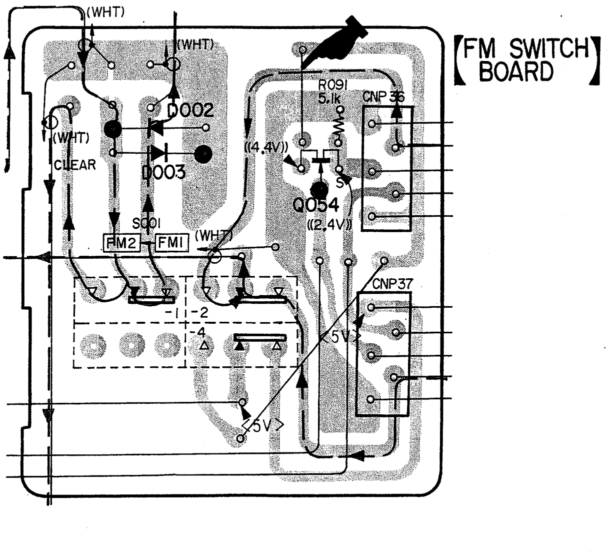
1 2 3


AEP, E MODEL
【POWER SUPPLY BOARD (A)】
BLU
RED
RED
F5
315mAT
F4
630mAT
F3
630mAT
C712
0.022
100V
D704
C711
0.022
100V
D703
12V
GRY
RED
YEL
ORG
S24
CNJ1
RED
F1
315mAT
ORG
RED
BRN
VIO
S23
6
4
7
8
3
9
12
BLU
YEL
WHT
BRN
GRY
WHT
T701
POWER
RED
ORG
120V
110V
0V
120V
10V
0V
BLK
RED
BLU
BLU
L
N
CNP33
5V
12V
C710
2200/16V
L703
3mH
ORG
BLK
YEL
BLK
BLU
BRN
WHT
RED
GRY
122
4
123
J
119
5
142
120
21
YEL
BLK
BLK
BLU
GRY
ORG
K
L
M
N
O
P
K,L,M,N,O,P
P
K
O
RED
RED
S25
S22
S21
YEL
YEL
GRY
GRY
POWER
J
2
12V
BLU
12V
BLU
BLU
RED
RED
RED x2
203
143
137
1,2,3
J
121,142
N,O,L
121,142
122,123
【POWER SUPPLY BOARD (B)】

4 5

Note:

When replacing Q054 2SK23A with 2SK19, short-circuit R092 2 kΩ.

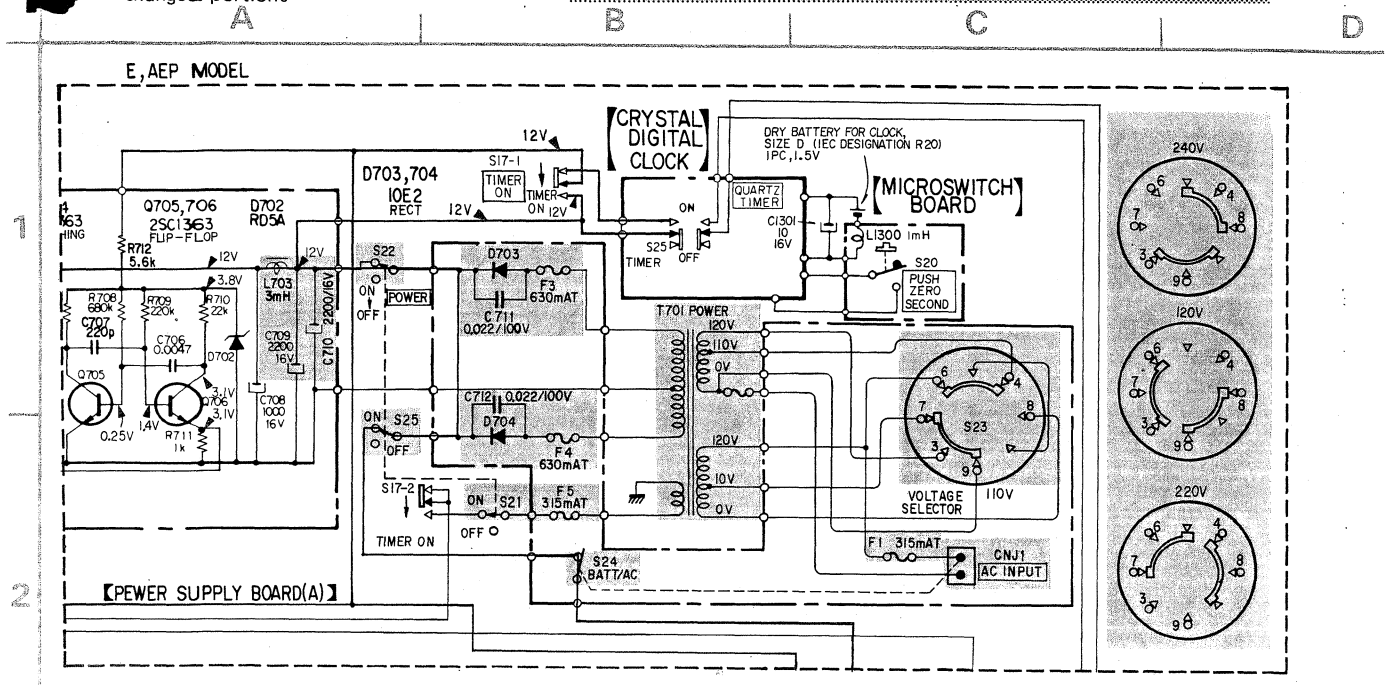

【FM SWITCH BOARD】
(WHT)
(WHT)
(WHT)
CLEAR
D002
D003
S001
FM2
FM1
(WHT)
R091
5.1k
CNP36
(4.4V)
S
Q054
(2.4V)
CNP37
-1
-2
-4
5V
5V

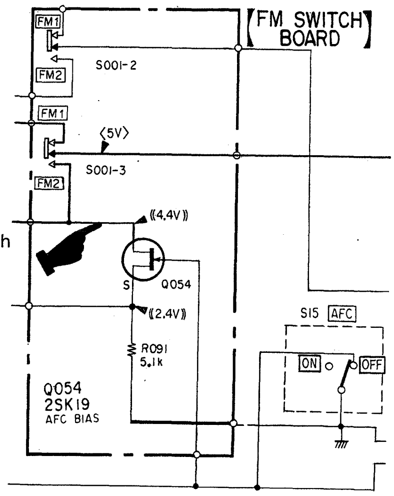
▨ : B+ pattern

4. SCHEMATIC DIAGRAM

Note: The components identified by shading are critical for safety. Replace only with part number specified.

: changed portions


A
B
C
D
1
2
E, AEP MODEL
CRYSTAL DIGITAL CLOCK
DRY BATTERY FOR CLOCK, SIZE D (IEC DESIGNATION R20) 1PC, 1.5V
MICROSWITCH BOARD
QUARTZ TIMER
C1301 10 16V
L1300 1mH
S20 PUSH ZERO SECOND
12V
S17-1
TIMER ON
TIMER
ON 12V
D703,704 10E2 RECT
12V
S25 TIMER
ON
OFF
Q705,706 2SC1363 FLIP-FLOP
D702 RD5A
R712 5.6k
12V
3.8V
R708 680k
R709 220k
R710 22k
C707 220p
C706 0.0047
D702
Q705
Q706
3.1V
3.1V
0.25V
1.4V
R711 1k
L703 3mH
C709 2200 16V
C710 2200/16V
C708 1000 16V
S22
ON
OFF
POWER
D703
F3 630mAT
C711 0.022/100V
C712 0.022/100V
D704
F4 630mAT
S25
ON
OFF
S17-2
TIMER ON
S21
ON
OFF
F5 315mAT
S24 BATT/AC
T701 POWER
120V
110V
0V
120V
10V
0V
S23
VOLTAGE SELECTOR
110V
F1 315mAT
CNJ1 AC INPUT
240V
120V
220V
PEWER SUPPLY BOARD(A)
1363
ING

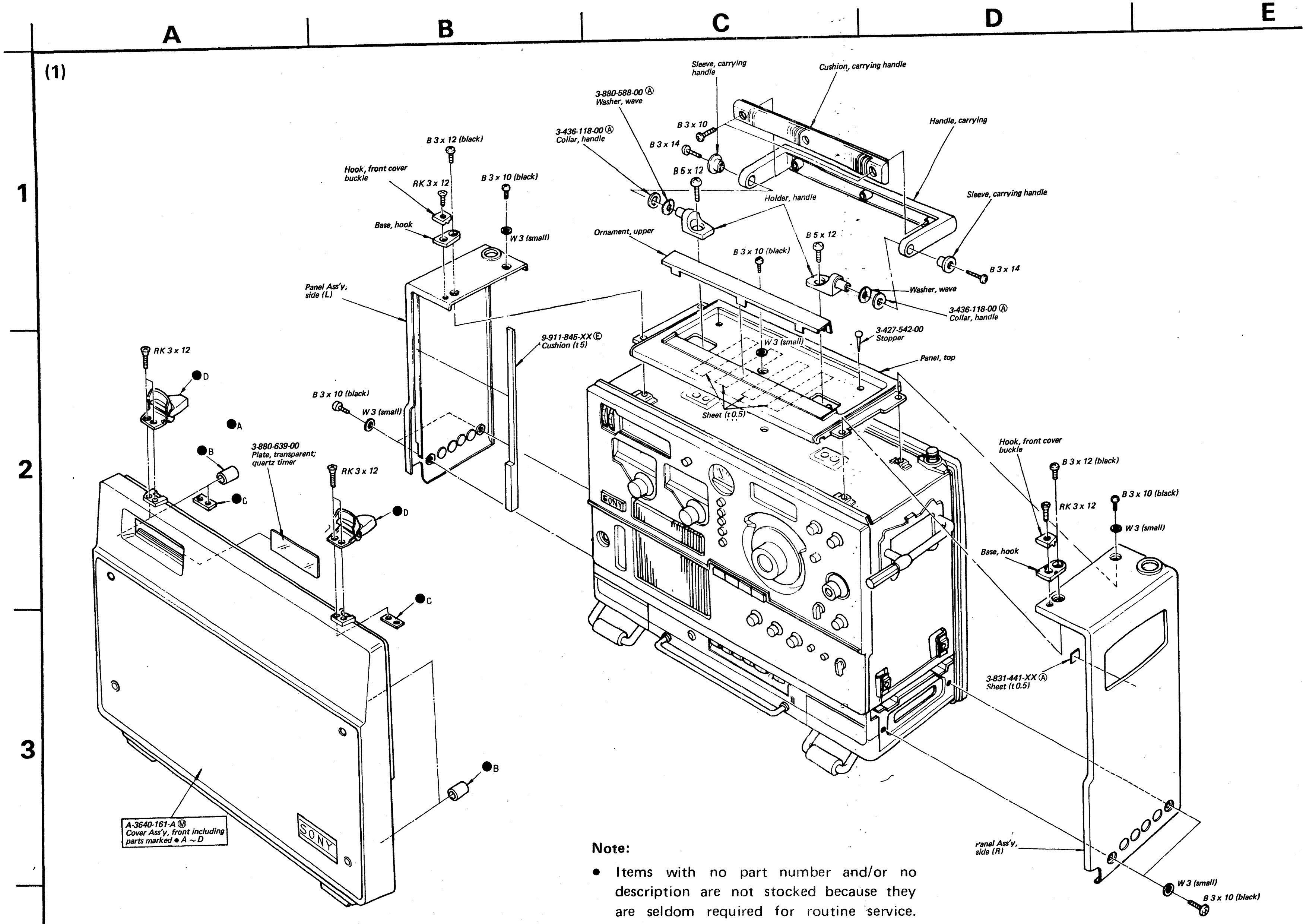

FM SWITCH BOARD
FM1
FM2
S001-2
FM1
FM2
(5V)
S001-3
(4.4V)
S
Q054
(2.4V)
R091 5.1k
Q054 2SK19 AFC BIAS
S15 AFC
ON
OFF

Note:
When replacing Q054 2SK23A with 2SK19, short-circuit R092 2 kΩ.

: B+ pattern

5. EXPLODED VIEWS

(1)

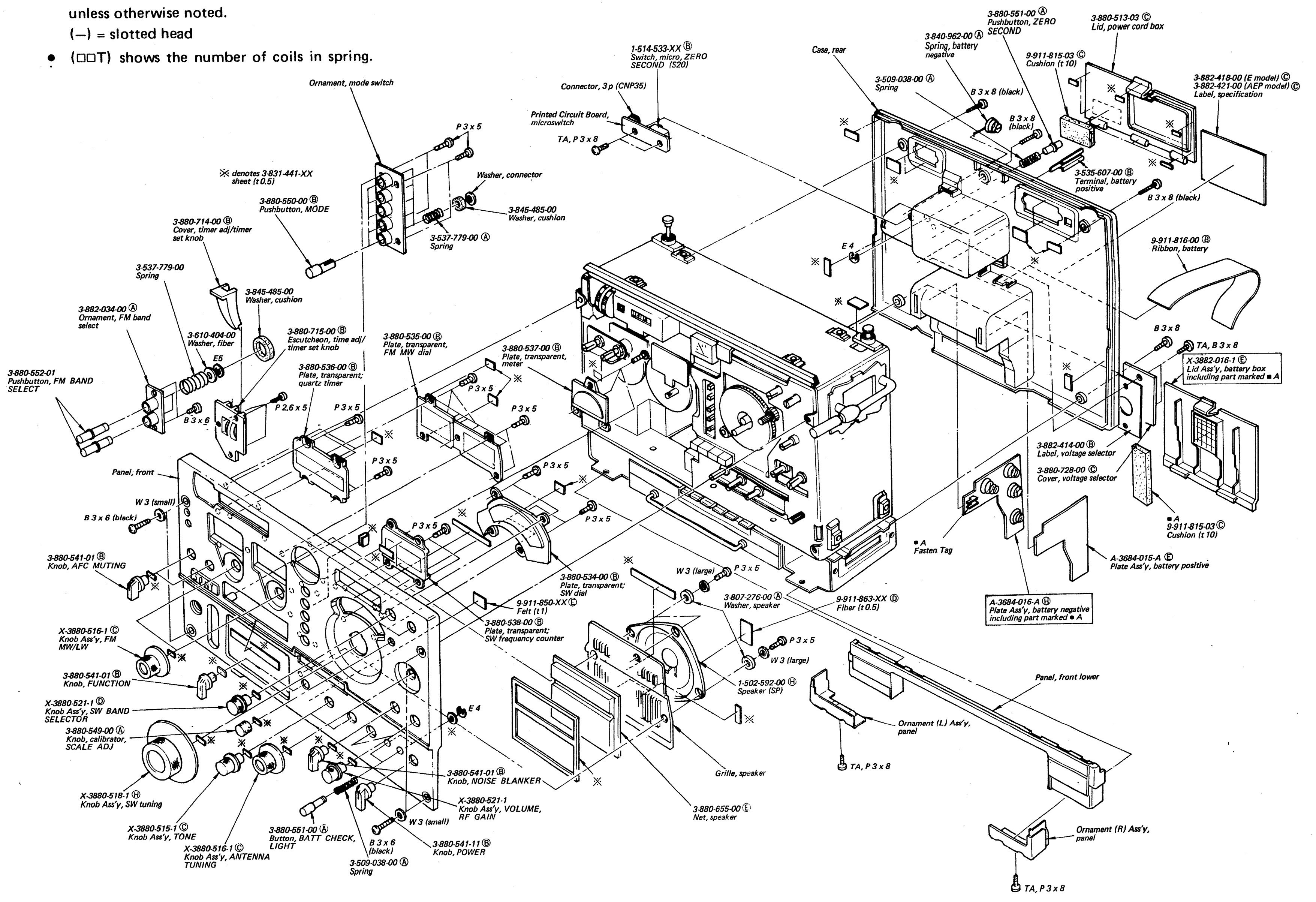

A
B
C
D
E
1
2
3
Sleeve, carrying handle
Cushion, carrying handle
3-880-588-00 Ⓐ
Washer, wave
B 3 x 10
Handle, carrying
3-436-118-00 Ⓐ
Collar, handle
B 3 x 14
B 5 x 12
Holder, handle
Sleeve, carrying handle
B 3 x 12 (black)
Hook, front cover buckle
RK 3 x 12
B 3 x 10 (black)
Base, hook
W 3 (small)
Ornament, upper
B 3 x 10 (black)
B 5 x 12
B 3 x 14
Washer, wave
3-436-118-00 Ⓐ
Collar, handle
Panel Ass'y, side (L)
9-911-845-XX Ⓔ
Cushion (t 5)
3-427-542-00
Stopper
W 3 (small)
Panel, top
Sheet (t 0.5)
RK 3 x 12
D
B 3 x 10 (black)
W 3 (small)
A
3-880-639-00
Plate, transparent; quartz timer
B
RK 3 x 12
C
D
Hook, front cover buckle
B 3 x 12 (black)
B 3 x 10 (black)
RK 3 x 12
W 3 (small)
Base, hook
C
3-831-441-XX Ⓐ
Sheet (t 0.5)
B
A-3640-161-A Ⓜ
Cover Ass'y, front including parts marked ● A ~ D
SONY
Panel Ass'y, side (R)
W 3 (small)
B 3 x 10 (black)

Note:

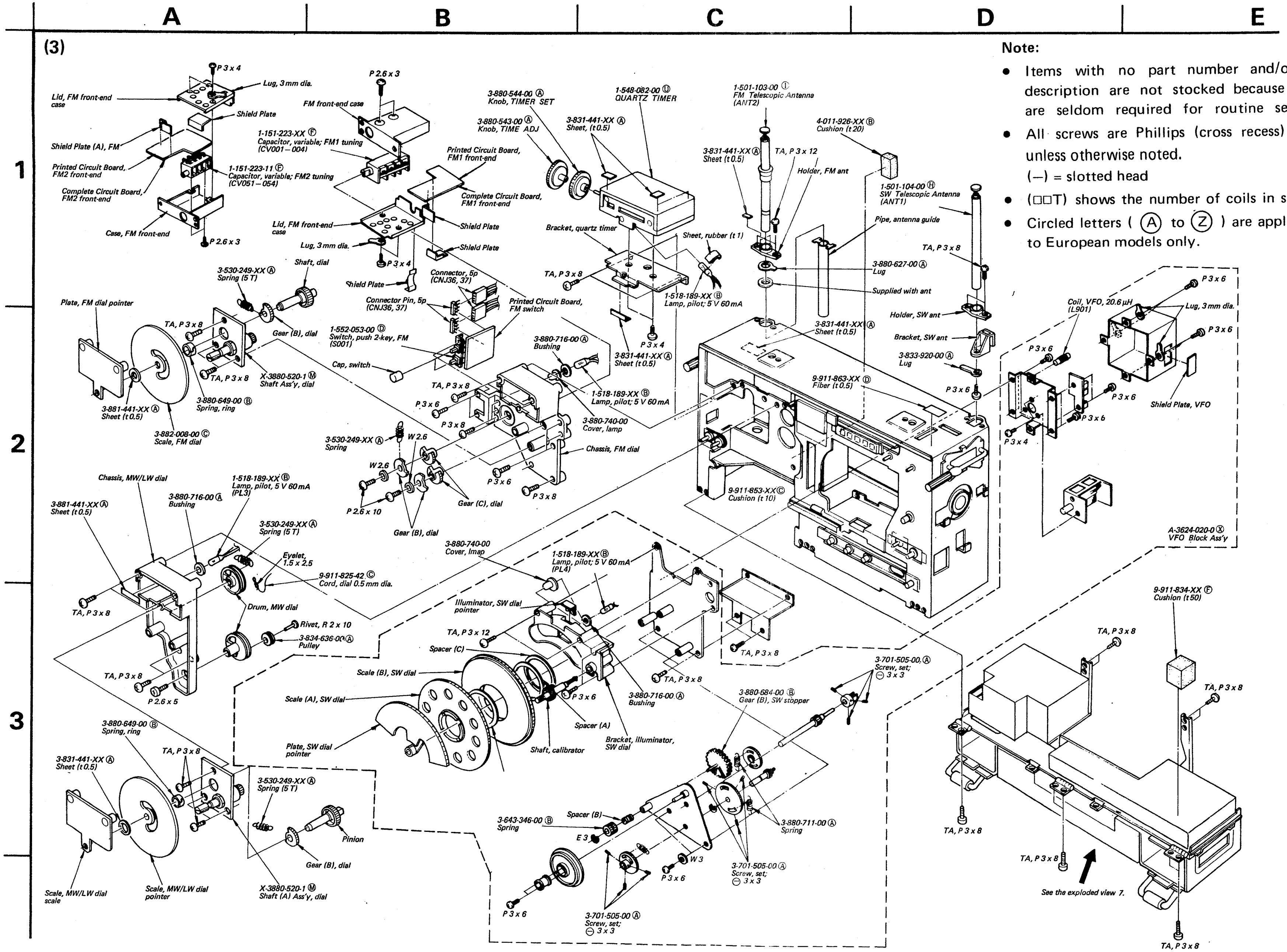
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

(2) **Note:**

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.


A
B
C
D
E
1
2
3
4
Ornament, mode switch
P 3 x 5
Washer, connector
3-845-485-00 Washer, cushion
3-537-779-00 Ⓐ Spring
※ denotes 3-831-441-XX sheet (t 0.5)
3-880-550-00 Ⓑ Pushbutton, MODE
3-880-714-00 Ⓑ Cover, timer adj/timer set knob
3-537-779-00 Spring
3-845-485-00 Washer, cushion
3-882-034-00 Ⓐ Ornament, FM band select
3-610-404-00 Washer, fiber
E5
3-880-552-01 Pushbutton, FM BAND SELECT
B 3 x 6
P 2.6 x 5
3-880-715-00 Ⓑ Escutcheon, time adj/timer set knob
3-880-536-00 Ⓑ Plate, transparent; quartz timer
3-880-535-00 Ⓑ Plate, transparent, FM MW dial
3-880-537-00 Ⓑ Plate, transparent, meter
1-514-533-XX Ⓑ Switch, micro, ZERO SECOND (S20)
Connector, 3 p (CNP35)
Printed Circuit Board, microswitch
TA, P 3 x 8
Case, rear
3-509-038-00 Ⓐ Spring
3-840-962-00 Ⓐ Spring, battery negative
B 3 x 8 (black)
3-880-551-00 Ⓐ Pushbutton, ZERO SECOND
B 3 x 8 (black)
9-911-815-03 Ⓒ Cushion (t 10)
3-880-513-03 Ⓒ Lid, power cord box
3-882-418-00 (E model) Ⓒ
3-882-421-00 (AEP model) Ⓒ
Label, specification
3-535-607-00 Ⓑ Terminal, battery positive
B 3 x 8 (black)
9-911-816-00 Ⓑ Ribbon, battery
E 4
B 3 x 8
TA, B 3 x 8
X-3882-016-1 Ⓔ Lid Ass'y, battery box including part marked ■ A
3-882-414-00 Ⓑ Label, voltage selector
3-880-728-00 Ⓒ Cover, voltage selector
■ A
9-911-815-03 Ⓒ Cushion (t 10)
● A Fasten Tag
A-3684-015-A Ⓔ Plate Ass'y, battery positive
A-3684-016-A Ⓗ Plate Ass'y, battery negative including part marked ● A
Panel, front
W 3 (small)
B 3 x 6 (black)
3-880-541-01 Ⓑ Knob, AFC MUTING
X-3880-516-1 Ⓒ Knob Ass'y, FM MW/LW
3-880-541-01 Ⓑ Knob, FUNCTION
X-3880-521-1 Ⓓ Knob Ass'y, SW BAND SELECTOR
3-880-549-00 Ⓐ Knob, calibrator, SCALE ADJ
X-3880-518-1 Ⓗ Knob Ass'y, SW tuning
X-3880-515-1 Ⓒ Knob Ass'y, TONE
X-3880-516-1 Ⓒ Knob Ass'y, ANTENNA TUNING
3-880-551-00 Ⓐ Button, BATT CHECK, LIGHT
B 3 x 6 (black)
3-509-038-00 Ⓐ Spring
W 3 (small)
3-880-541-11 Ⓑ Knob, POWER
X-3880-521-1 Knob Ass'y, VOLUME, RF GAIN
3-880-541-01 Ⓑ Knob, NOISE BLANKER
E 4
P 3 x 5
3-880-534-00 Ⓑ Plate, transparent; SW dial
9-911-850-XX Ⓔ Felt (t 1)
3-880-538-00 Ⓑ Plate, transparent; SW frequency counter
W 3 (large)
3-807-276-00 Ⓐ Washer, speaker
9-911-863-XX Ⓓ Fiber (t 0.5)
W 3 (large)
1-502-592-00 Ⓗ Speaker (SP)
Grille, speaker
3-880-655-00 Ⓔ Net, speaker
Panel, front lower
Ornament (L) Ass'y, panel
TA, P 3 x 8
Ornament (R) Ass'y, panel
TA, P 3 x 8
※

(3)


A
B
C
D
E
1
2
3
P 3 x 4
Lug, 3mm dia.
Lid, FM front-end case
Shield Plate
Shield Plate (A), FM
Printed Circuit Board, FM2 front-end
Complete Circuit Board, FM2 front-end
1-151-223-11 Ⓕ Capacitor, variable; FM2 tuning (CV051 – 054)
Case, FM front-end
P 2.6 x 3
P 2.6 x 3
FM front-end case
1-151-223-XX Ⓕ Capacitor, variable; FM1 tuning (CV001 – 004)
Printed Circuit Board, FM1 front-end
Complete Circuit Board, FM1 front-end
Lid, FM front-end case
Shield Plate
Shield Plate
Lug, 3mm dia.
P 3 x 4
Shaft, dial
3-530-249-XX Ⓐ Spring (5 T)
Shield Plate
Connector, 5p (CNJ36, 37)
Connector Pin, 5p (CNJ36, 37)
Printed Circuit Board, FM switch
1-552-053-00 Ⓓ Switch, push 2-key, FM (S001)
Cap, switch
Plate, FM dial pointer
TA, P 3 x 8
Gear (B), dial
TA, P 3 x 8
X-3880-520-1 Ⓜ Shaft Ass'y, dial
3-881-441-XX Ⓐ Sheet (t 0.5)
3-880-649-00 Ⓑ Spring, ring
3-882-008-00 Ⓒ Scale, FM dial
3-880-544-00 Ⓐ Knob, TIMER SET
3-880-543-00 Ⓐ Knob, TIME ADJ
3-831-441-XX Ⓐ Sheet, (t 0.5)
1-548-082-00 Ⓓ QUARTZ TIMER
Bracket, quartz timer
TA, P 3 x 8
Sheet, rubber (t 1)
1-518-189-XX Ⓑ Lamp, pilot; 5 V 60 mA
P 3 x 4
3-831-441-XX Ⓐ Sheet (t 0.5)
3-880-716-00 Ⓐ Bushing
1-518-189-XX Ⓑ Lamp, pilot; 5 V 60 mA
3-880-740-00 Cover, lamp
TA, P 3 x 8
P 3 x 6
P 3 x 8
Chassis, FM dial
3-530-249-XX Ⓐ Spring
W 2.6
W 2.6
P 2.6 x 10
Gear (B), dial
Gear (C), dial
P 3 x 6
P 3 x 8
1-501-103-00 Ⓘ FM Telescopic Antenna (ANT2)
3-831-441-XX Ⓐ Sheet (t 0.5)
TA, P 3 x 12
Holder, FM ant
4-011-926-XX Ⓑ Cushion (t 20)
1-501-104-00 Ⓗ SW Telescopic Antenna (ANT1)
Pipe, antenna guide
TA, P 3 x 8
3-880-627-00 Ⓐ Lug
Supplied with ant
Holder, SW ant
Bracket, SW ant
3-831-441-XX Ⓐ Sheet (t 0.5)
3-833-920-00 Ⓐ Lug
9-911-863-XX Ⓓ Fiber (t 0.5)
P 3 x 6
9-911-853-XX Ⓒ Cushion (t 10)
P 3 x 6
Coil, VFO, 20.6 μH (L901)
Lug, 3 mm dia.
P 3 x 6
P 3 x 6
P 3 x 6
P 3 x 6
P 3 x 4
Shield Plate, VFO
A-3624-020-0 Ⓧ VFO Block Ass'y
Chassis, MW/LW dial
1-518-189-XX Ⓑ Lamp, pilot, 5 V 60 mA (PL3)
3-881-441-XX Ⓐ Sheet (t 0.5)
3-880-716-00 Ⓐ Bushing
3-530-249-XX Ⓐ Spring (5 T)
Eyelet, 1.5 x 2.5
9-911-825-42 Ⓒ Cord, dial 0.5 mm dia.
TA, P 3 x 8
Drum, MW dial
Rivet, R 2 x 10
3-834-636-00 Ⓐ Pulley
TA, P 3 x 8
P 2.6 x 5
3-880-740-00 Cover, lmap
1-518-189-XX Ⓑ Lamp, pilot; 5 V 60 mA (PL4)
Illuminator, SW dial pointer
TA, P 3 x 12
Spacer (C)
Scale (B), SW dial
Scale (A), SW dial
Plate, SW dial pointer
Shaft, calibrator
P 3 x 6
Spacer (A)
Bracket, illuminator, SW dial
3-880-716-00 Ⓐ Bushing
TA, P 3 x 8
TA, P 3 x 8
3-701-505-00 Ⓐ Screw, set; ⊖ 3 x 3
3-880-684-00 Ⓑ Gear (B), SW stopper
3-880-711-00 Ⓐ Spring
3-701-505-00 Ⓐ Screw, set; ⊖ 3 x 3
Spacer (B)
3-643-346-00 Ⓑ Spring
E 3
W 3
P 3 x 6
P 3 x 6
3-701-505-00 Ⓐ Screw, set; ⊖ 3 x 3
3-880-649-00 Ⓑ Spring, ring
TA, P 3 x 8
3-831-441-XX Ⓐ Sheet (t 0.5)
3-530-249-XX Ⓐ Spring (5 T)
Pinion
Gear (B), dial
Scale, MW/LW dial scale
Scale, MW/LW dial pointer
X-3880-520-1 Ⓜ Shaft (A) Ass'y, dial
9-911-834-XX Ⓕ Cushion (t 50)
TA, P 3 x 8
TA, P 3 x 8
TA, P 3 x 8
TA, P 3 x 8
TA, P 3 x 8
See the exploded view 7.

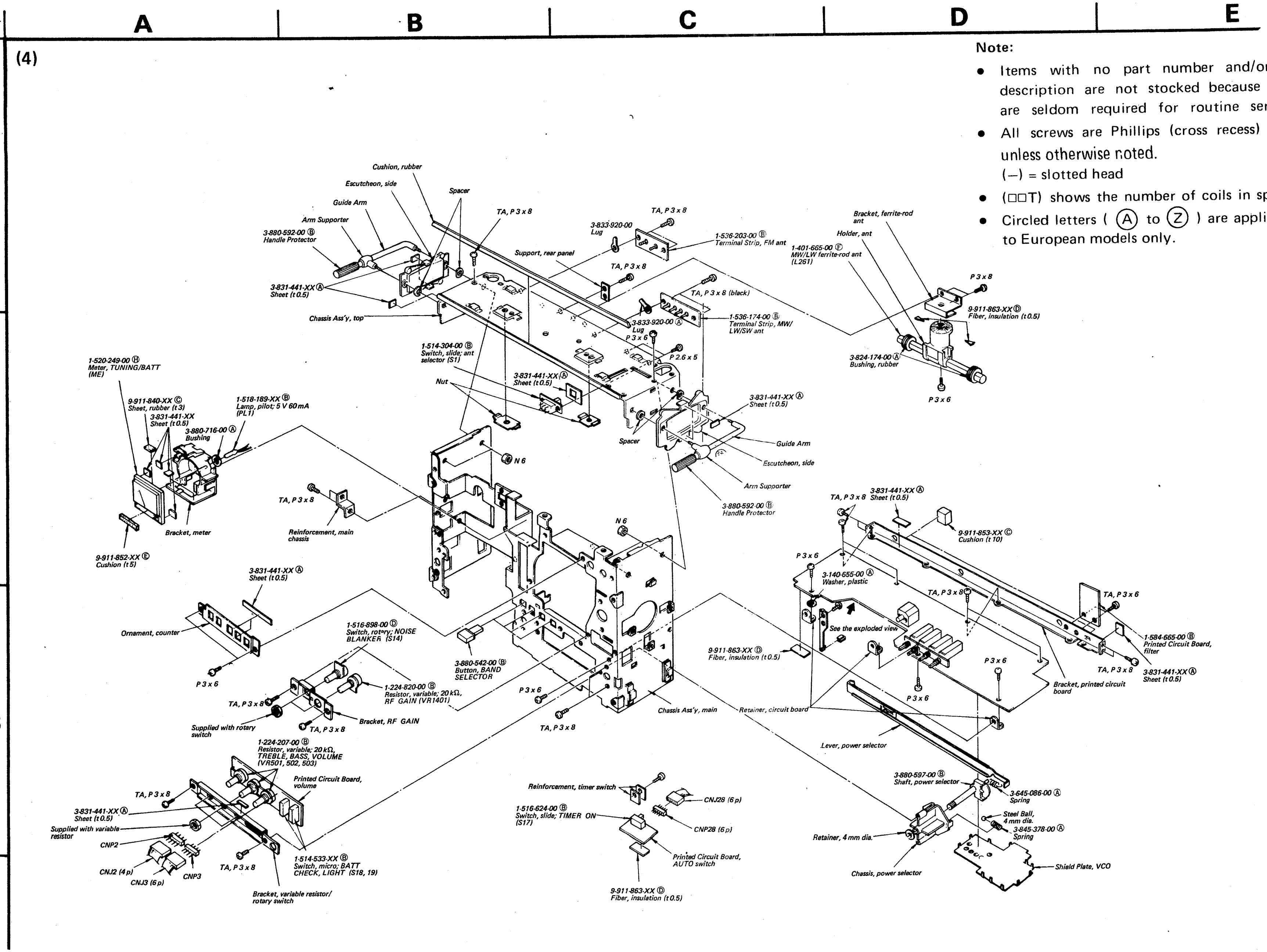
Note:

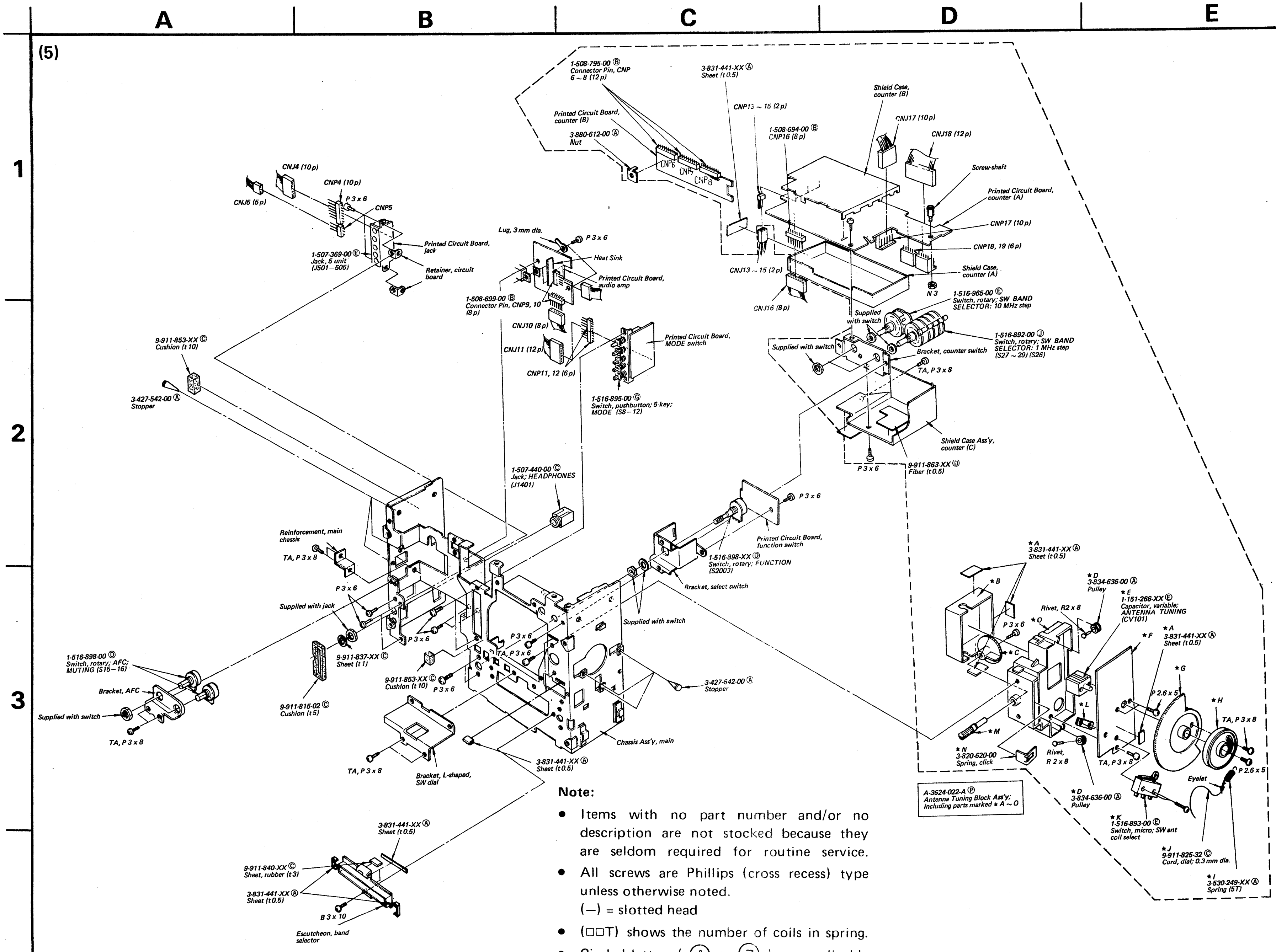
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

(4)

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.


A
B
C
D
E
1
2
3
Cushion, rubber
Escutcheon, side
Guide Arm
Spacer
Arm Supporter
3-880-592-00 Ⓑ Handle Protector
TA, P 3 x 8
3-833-920-00 Lug
TA, P 3 x 8
1-536-203-00 Ⓑ Terminal Strip, FM ant
1-401-665-00 Ⓕ MW/LW ferrite-rod ant (L261)
Bracket, ferrite-rod ant
Holder, ant
P 3 x 8
9-911-863-XX Ⓓ Fiber, insulation (t 0.5)
3-824-174-00 Ⓐ Bushing, rubber
P 3 x 6
Support, rear panel
TA, P 3 x 8
TA, P 3 x 8 (black)
3-831-441-XX Ⓐ Sheet (t 0.5)
Chassis Ass'y, top
3-833-920-00 Ⓐ Lug
P 3 x 6
1-536-174-00 Ⓑ Terminal Strip, MW/ LW/SW ant
P 2.6 x 5
1-514-304-00 Ⓑ Switch, slide; ant selector (S1)
3-831-441-XX Ⓐ Sheet (t 0.5)
Nut
3-831-441-XX Ⓐ Sheet (t 0.5)
Spacer
Guide Arm
Escutcheon, side
Arm Supporter
3-880-592-00 Ⓑ Handle Protector
1-520-249-00 Ⓗ Meter, TUNING/BATT (ME)
9-911-840-XX Ⓒ Sheet, rubber (t 3)
3-831-441-XX Sheet (t 0.5)
3-880-716-00 Ⓐ Bushing
1-518-189-XX Ⓑ Lamp, pilot; 5 V 60 mA (PL1)
N 6
TA, P 3 x 8
Reinforcement, main chassis
Bracket, meter
9-911-852-XX Ⓔ Cushion (t 5)
N 6
3-831-441-XX Ⓐ Sheet (t 0.5)
TA, P 3 x 8 3-831-441-XX Ⓐ Sheet (t 0.5)
9-911-853-XX Ⓒ Cushion (t 10)
P 3 x 6
3-140-655-00 Ⓐ Washer, plastic
TA, P 3 x 8
TA, P 3 x 6
See the exploded view
1-584-665-00 Ⓑ Printed Circuit Board, filter
Ornament, counter
1-516-898-00 Ⓓ Switch, rotary; NOISE BLANKER (S14)
9-911-863-XX Ⓓ Fiber, insulation (t 0.5)
P 3 x 6
TA, P 3 x 8 3-831-441-XX Ⓐ Sheet (t 0.5)
Bracket, printed circuit board
P 3 x 6
1-224-820-00 Ⓑ Resistor, variable; 20 kΩ, RF GAIN (VR1401)
3-880-542-00 Ⓑ Button, BAND SELECTOR
P 3 x 6
P 3 x 6
TA, P 3 x 8
Bracket, RF GAIN
Chassis Ass'y, main
Retainer, circuit board
Supplied with rotary switch
TA, P 3 x 8
TA, P 3 x 8
Lever, power selector
1-224-207-00 Ⓑ Resistor, variable; 20 kΩ, TREBLE, BASS, VOLUME (VR501, 502, 503)
Printed Circuit Board, volume
TA, P 3 x 8
3-831-441-XX Ⓐ Sheet (t 0.5)
Supplied with variable resistor
CNP2
CNJ2 (4 p)
CNJ3 (6 p)
CNP3
TA, P 3 x 8
1-514-533-XX Ⓑ Switch, micro; BATT CHECK, LIGHT (S18, 19)
Bracket, variable resistor/ rotary switch
Reinforcement, timer switch
CNJ28 (6 p)
1-516-624-00 Ⓑ Switch, slide; TIMER ON (S17)
CNP28 (6 p)
Printed Circuit Board, AUTO switch
9-911-863-XX Ⓓ Fiber, insulation (t 0.5)
3-880-597-00 Ⓑ Shaft, power selector
3-645-086-00 Ⓐ Spring
Steel Ball, 4 mm dia.
3-845-378-00 Ⓐ Spring
Retainer, 4 mm dia.
Shield Plate, VCO
Chassis, power selector


A
B
C
D
E
1
2
3
(5)
1-508-795-00 Ⓑ Connector Pin, CNP 6 ~ 8 (12p)
3-831-441-XX Ⓐ Sheet (t 0.5)
Printed Circuit Board, counter (B)
3-880-612-00 Ⓐ Nut
CNP6
CNP7
CNP8
CNP13 ~ 15 (2p)
1-508-694-00 Ⓑ CNP16 (8p)
Shield Case, counter (B)
CNJ17 (10p)
CNJ18 (12p)
Screw-shaft
Printed Circuit Board, counter (A)
CNP17 (10p)
CNP18, 19 (6p)
Shield Case, counter (A)
N 3
CNJ13 ~ 15 (2p)
CNJ16 (8p)
1-516-965-00 Ⓔ Switch, rotary; SW BAND SELECTOR: 10 MHz step
1-516-892-00 Ⓓ Switch, rotary; SW BAND SELECTOR: 1 MHz step (S27 ~ 29) (S26)
Supplied with switch
Supplied with switch
Bracket, counter switch
TA, P 3 x 8
Shield Case Ass'y, counter (C)
P 3 x 6
9-911-863-XX Ⓓ Fiber (t 0.5)
CNJ4 (10p)
CNP4 (10p)
CNJ5 (5p)
P 3 x 6
CNP5
1-507-369-00 Ⓔ Jack, 5 unit (J501 – 505)
Printed Circuit Board, jack
Retainer, circuit board
Lug, 3 mm dia.
P 3 x 6
Heat Sink
Printed Circuit Board, audio amp
1-508-699-00 Ⓑ Connector Pin, CNP9, 10 (8p)
CNJ10 (8p)
CNJ11 (12p)
CNP11, 12 (6p)
Printed Circuit Board, MODE switch
1-516-895-00 Ⓖ Switch, pushbutton; 5-key; MODE (S8 – 12)
9-911-853-XX Ⓒ Cushion (t 10)
3-427-542-00 Ⓐ Stopper
1-507-440-00 Ⓒ Jack; HEADPHONES (J1401)
P 3 x 6
Printed Circuit Board, function switch
1-516-898-XX Ⓓ Switch, rotary; FUNCTION (S2003)
Bracket, select switch
Supplied with switch
Reinforcement, main chassis
TA, P 3 x 8
P 3 x 6
Supplied with jack
P 3 x 6
9-911-837-XX Ⓒ Sheet (t 1)
P 3 x 6
TA, P 3 x 8
P 3 x 6
9-911-853-XX Ⓒ Cushion (t 10)
P 3 x 6
9-911-815-02 Ⓒ Cushion (t 5)
3-427-542-00 Ⓐ Stopper
Chassis Ass'y, main
1-516-898-00 Ⓓ Switch, rotary; AFC; MUTING (S15 – 16)
Bracket, AFC
Supplied with switch
TA, P 3 x 8
TA, P 3 x 8
Bracket, L-shaped, SW dial
3-831-441-XX Ⓐ Sheet (t 0.5)
3-831-441-XX Ⓐ Sheet (t 0.5)
9-911-840-XX Ⓒ Sheet, rubber (t 3)
3-831-441-XX Ⓐ Sheet (t 0.5)
B 3 x 10
Escutcheon, band selector
★A 3-831-441-XX Ⓐ Sheet (t 0.5)
★B
★D 3-834-636-00 Ⓐ Pulley
★E 1-151-266-XX Ⓔ Capacitor, variable; ANTENNA TUNING (CV101)
Rivet, R2 x 8
★O
P 3 x 6
★C
★F
★A 3-831-441-XX Ⓐ Sheet (t 0.5)
★G
P 2.6 x 5
★H
TA, P 3 x 8
★L
★M
★N 3-820-620-00 Spring, click
Rivet, R 2 x 8
TA, P 3 x 8
P 2.6 x 5
Eyelet
A-3624-022-A Ⓟ Antenna Tuning Block Ass'y; Including parts marked ★A ~ O
★D 3-834-636-00 Ⓐ Pulley
★K 1-516-893-00 Ⓔ Switch, micro; SW ant coil select
★J 9-911-825-32 Ⓒ Cord, dial; 0.3 mm dia.
★I 3-530-249-XX Ⓐ Spring (5T)

Note:

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A B C

(6)

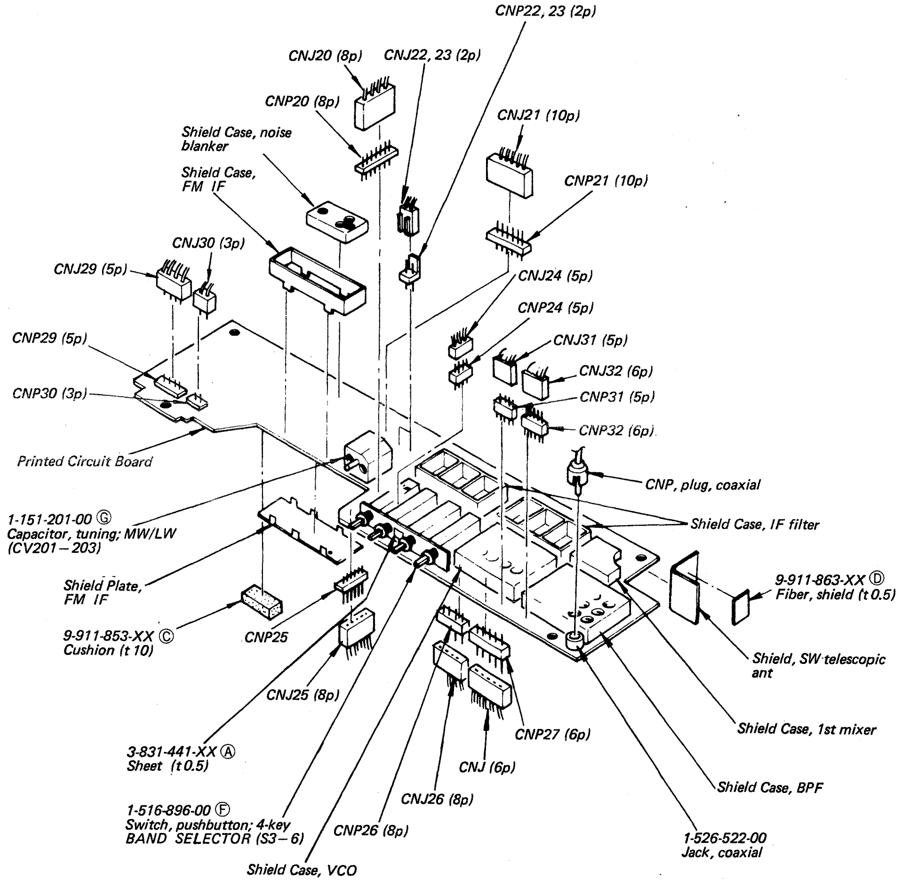
1

2

3

4

5


CNP22, 23 (2p)
CNJ20 (8p)
CNJ22, 23 (2p)
CNP20 (8p)
CNJ21 (10p)
Shield Case, noise blanker
Shield Case, FM IF
CNP21 (10p)
CNJ30 (3p)
CNJ29 (5p)
CNJ24 (5p)
CNP24 (5p)
CNP29 (5p)
CNJ31 (5p)
CNJ32 (6p)
CNP30 (3p)
CNP31 (5p)
CNP32 (6p)
Printed Circuit Board
CNP, plug, coaxial
1-151-201-00 Ⓖ
Capacitor, tuning; MW/LW
(CV201 – 203)
Shield Case, IF filter
Shield Plate, FM IF
9-911-863-XX Ⓓ
Fiber, shield (t 0.5)
9-911-853-XX Ⓒ
Cushion (t 10)
CNP25
Shield, SW telescopic ant
CNJ25 (8p)
Shield Case, 1st mixer
CNP27 (6p)
3-831-441-XX Ⓐ
Sheet (t 0.5)
CNJ (6p)
Shield Case, BPF
CNJ26 (8p)
1-516-896-00 Ⓕ
Switch, pushbutton; 4-key
BAND SELECTOR (S3 – 6)
CNP26 (8p)
1-526-522-00
Jack, coaxial
Shield Case, VCO

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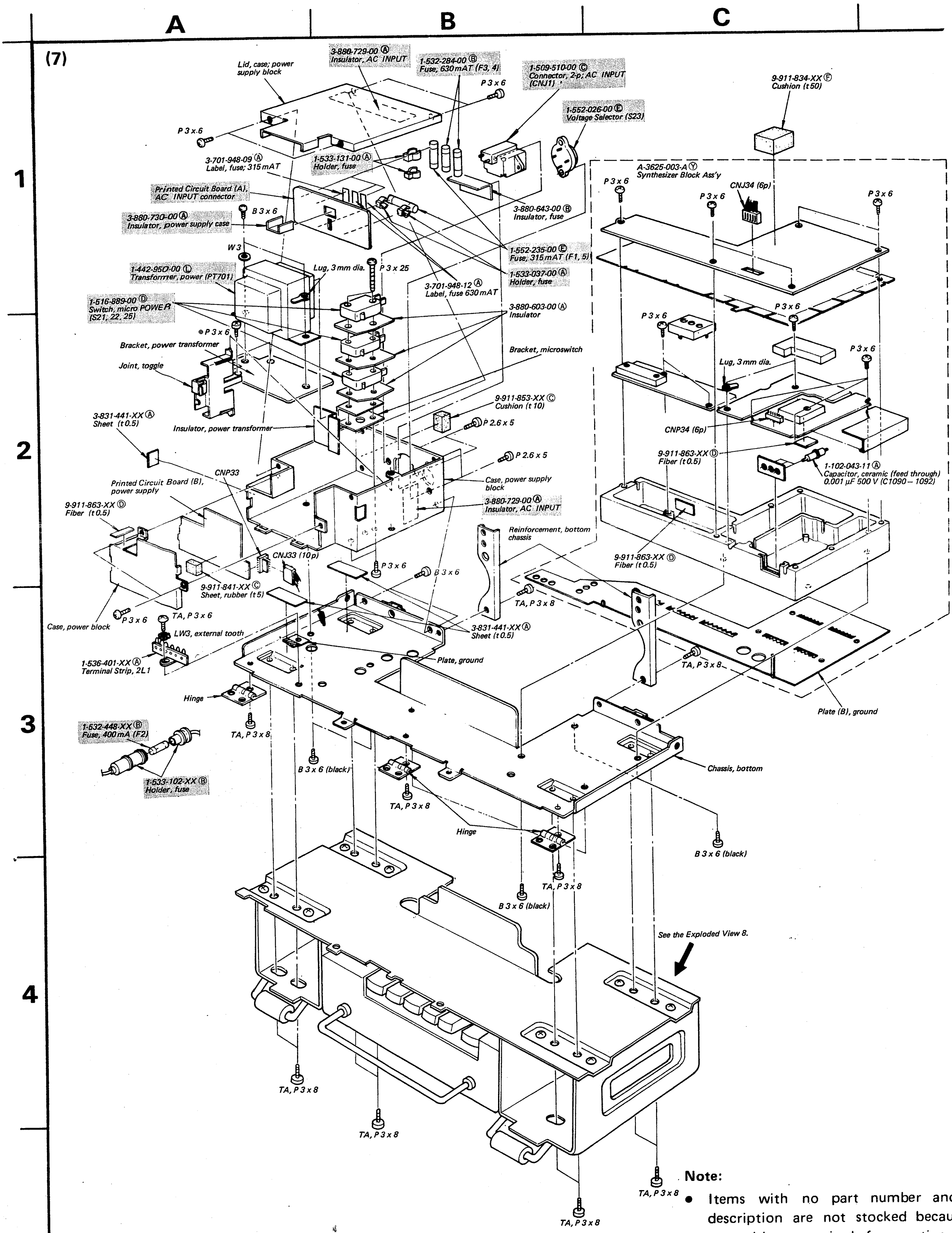
A
B
C
1
2
3
4
(7)
Lid, case; power supply block
3-880-729-00 Ⓐ
Insulator, AC INPUT
1-532-284-00 Ⓑ
Fuse, 630 mAT (F3, 4)
1-509-510-00 Ⓒ
Connector, 2-p; AC INPUT (CNJ1)
1-552-026-00 Ⓔ
Voltage Selector (S23)
9-911-834-XX Ⓕ
Cushion (t 50)
P 3 x 6
P 3 x.6
3-701-948-09 Ⓐ
Label, fuse; 315 mAT
1-533-131-00 Ⓐ
Holder, fuse
Printed Circuit Board (A), AC INPUT connector
3-880-730-00 Ⓐ
Insulator, power supply case
B 3 x 6
3-880-643-00 Ⓑ
Insulator, fuse
W 3
1-552-235-00 Ⓔ
Fuse, 315 mAT (F1, 5)
1-533-037-00 Ⓐ
Holder, fuse
1-442-950-00 Ⓛ
Transformer, power (PT701)
Lug, 3 mm dia.
P 3 x 25
3-701-948-12 Ⓐ
Label, fuse 630 mAT
1-516-889-00 Ⓓ
Switch, micro POWER (S21, 22, 25)
3-880-603-00 Ⓐ
Insulator
⊕P 3 x 6
Bracket, power transformer
Joint, toggle
Bracket, microswitch
A-3625-003-A Ⓨ
Synthesizer Block Ass'y
CNJ34 (6p)
P 3 x 6
P 3 x 6
P 3 x 6
P 3 x 6
P 3 x 6
P 3 x 6
Lug, 3 mm dia.
CNP34 (6p)
9-911-863-XX Ⓓ
Fiber (t 0.5)
1-102-043-11 Ⓐ
Capacitor, ceramic (feed through) 0.001 μF 500 V (C1090 – 1092)
9-911-853-XX Ⓒ
Cushion (t 10)
P 2.6 x 5
P 2.6 x 5
3-831-441-XX Ⓐ
Sheet (t 0.5)
Insulator, power transformer
CNP33
Printed Circuit Board (B), power supply
Case, power supply block
3-880-729-00 Ⓐ
Insulator, AC INPUT
9-911-863-XX Ⓓ
Fiber (t 0.5)
Reinforcement, bottom chassis
9-911-863-XX Ⓓ
Fiber (t 0.5)
CNJ33 (10p)
P 3 x 6
B 3 x 6
9-911-841-XX Ⓒ
Sheet, rubber (t 5)
TA, P 3 x 8
P 3 x 6
TA, P 3 x 6
LW3, external tooth
Case, power block
3-831-441-XX Ⓐ
Sheet (t 0.5)
1-536-401-XX Ⓐ
Terminal Strip, 2L1
Plate, ground
TA, P 3 x 8
Hinge
Plate (B), ground
1-532-448-XX Ⓑ
Fuse, 400 mA (F2)
TA, P 3 x 8
1-533-102-XX Ⓑ
Holder, fuse
B 3 x 6 (black)
Chassis, bottom
TA, P 3 x 8
Hinge
B 3 x 6 (black)
TA, P 3 x 8
B 3 x 6 (black)
See the Exploded View 8.
TA, P 3 x 8
TA, P 3 x 8
TA, P 3 x 8
TA, P 3 x 8

5

Note: The components identified by shading are critical for safety. Replace only with part number specified.

Note:

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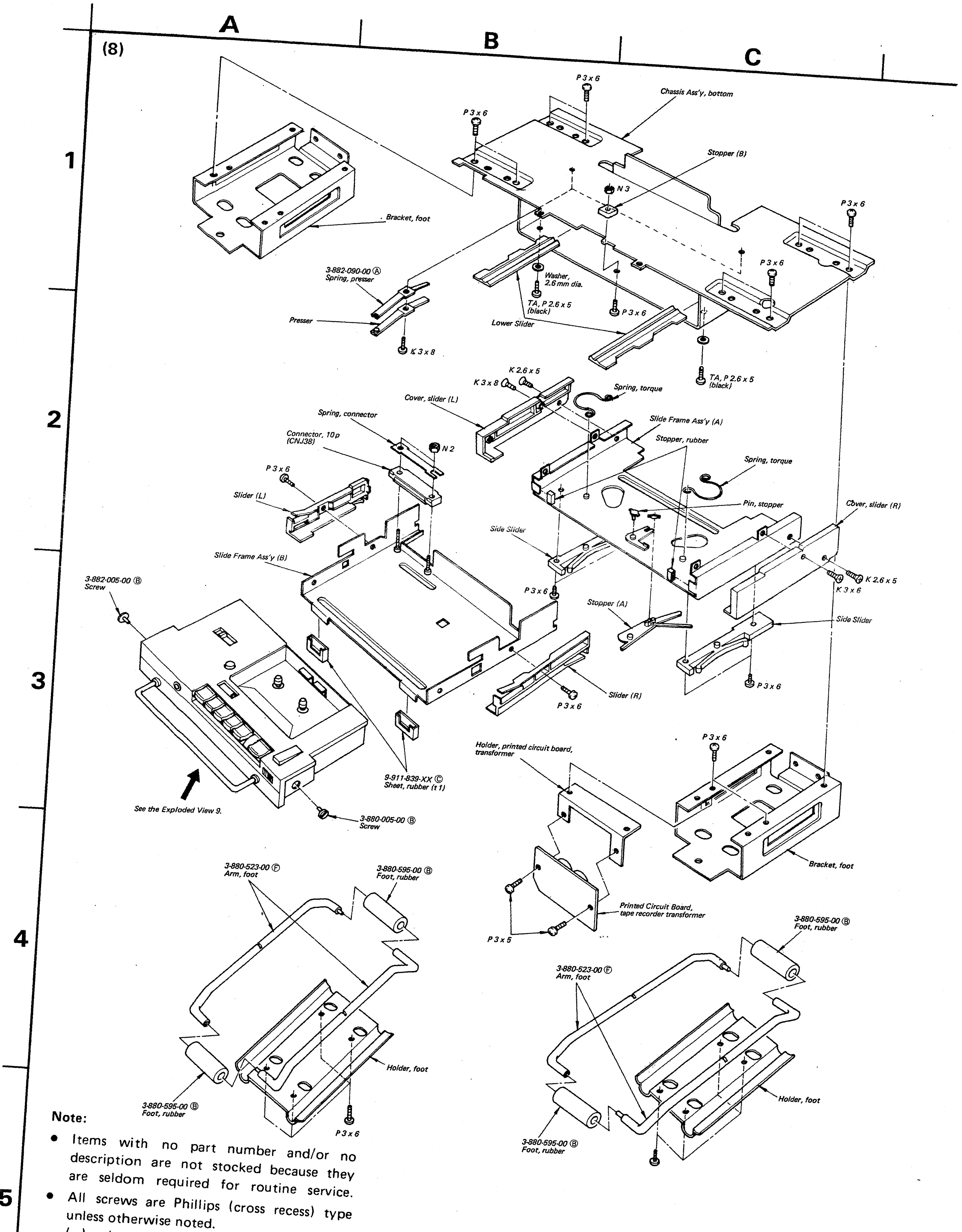
  (–) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.


A
B
C
(8)
1
2
3
4
5
P 3 x 6
Chassis Ass'y, bottom
P 3 x 6
Stopper (B)
N 3
P 3 x 6
Bracket, foot
P 3 x 6
3-882-090-00 Ⓐ
Spring, presser
Washer, 2.6 mm dia.
TA, P 2.6 x 5 (black)
P 3 x 6
Presser
Lower Slider
K 3 x 8
TA, P 2.6 x 5 (black)
K 2.6 x 5
K 3 x 8
Spring, torque
Cover, slider (L)
Slide Frame Ass'y (A)
Spring, connector
Stopper, rubber
Connector, 10p (CNJ38)
N 2
Spring, torque
P 3 x 6
Slider (L)
Pin, stopper
Cover, slider (R)
Side Slider
Slide Frame Ass'y (B)
K 2.6 x 5
K 3 x 6
3-882-005-00 Ⓑ
Screw
P 3 x 6
Stopper (A)
Side Slider
Slider (R)
P 3 x 6
P 3 x 6
P 3 x 6
Holder, printed circuit board, transformer
9-911-839-XX Ⓒ
Sheet, rubber (t 1)
See the Exploded View 9.
3-880-005-00 Ⓑ
Screw
Bracket, foot
3-880-523-00 Ⓕ
Arm, foot
3-880-595-00 Ⓑ
Foot, rubber
Printed Circuit Board, tape recorder transformer
P 3 x 5
3-880-595-00 Ⓑ
Foot, rubber
3-880-523-00 Ⓕ
Arm, foot
Holder, foot
Holder, foot
3-880-595-00 Ⓑ
Foot, rubber
P 3 x 6
3-880-595-00 Ⓑ
Foot, rubber

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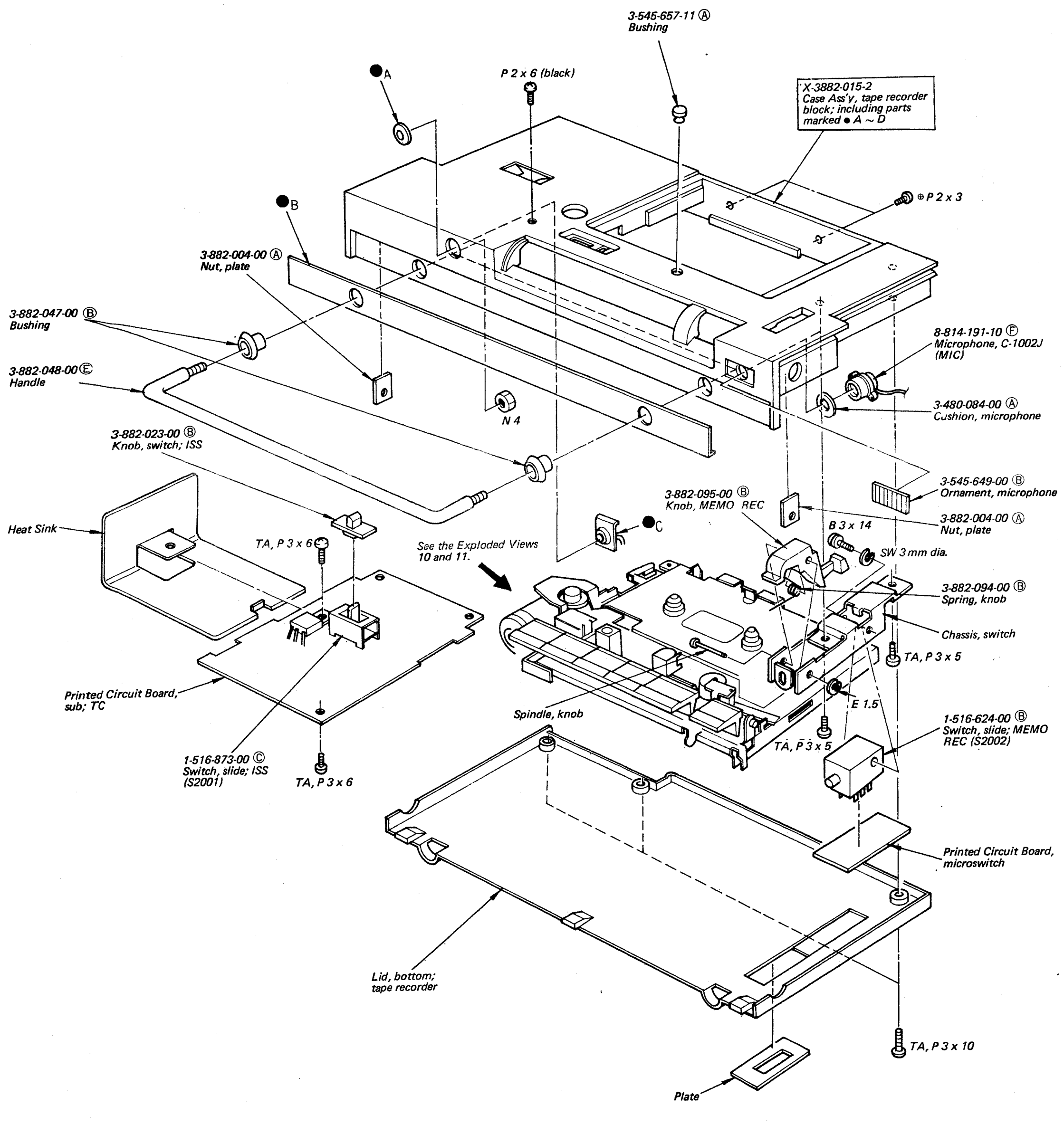
(9)


A
B
C
1
2
3
4
5
3-545-657-11 Ⓐ
Bushing
●A
P 2 x 6 (black)
X-3882-015-2
Case Ass'y, tape recorder block; including parts marked ● A ~ D
⊕ P 2 x 3
●B
3-882-004-00 Ⓐ
Nut, plate
3-882-047-00 Ⓑ
Bushing
3-882-048-00 Ⓔ
Handle
N 4
8-814-191-10 Ⓕ
Microphone, C-1002J (MIC)
3-480-084-00 Ⓐ
Cushion, microphone
3-882-023-00 Ⓑ
Knob, switch; ISS
3-545-649-00 Ⓑ
Ornament, microphone
3-882-095-00 Ⓑ
Knob, MEMO REC
3-882-004-00 Ⓐ
Nut, plate
●C
B 3 x 14
Heat Sink
TA, P 3 x 6
See the Exploded Views 10 and 11.
SW 3 mm dia.
3-882-094-00 Ⓑ
Spring, knob
Chassis, switch
TA, P 3 x 5
E 1.5
Printed Circuit Board, sub; TC
Spindle, knob
TA, P 3 x 5
1-516-624-00 Ⓑ
Switch, slide; MEMO REC (S2002)
1-516-873-00 Ⓒ
Switch, slide; ISS (S2001)
TA, P 3 x 6
Printed Circuit Board, microswitch
Lid, bottom; tape recorder
TA, P 3 x 10
Plate

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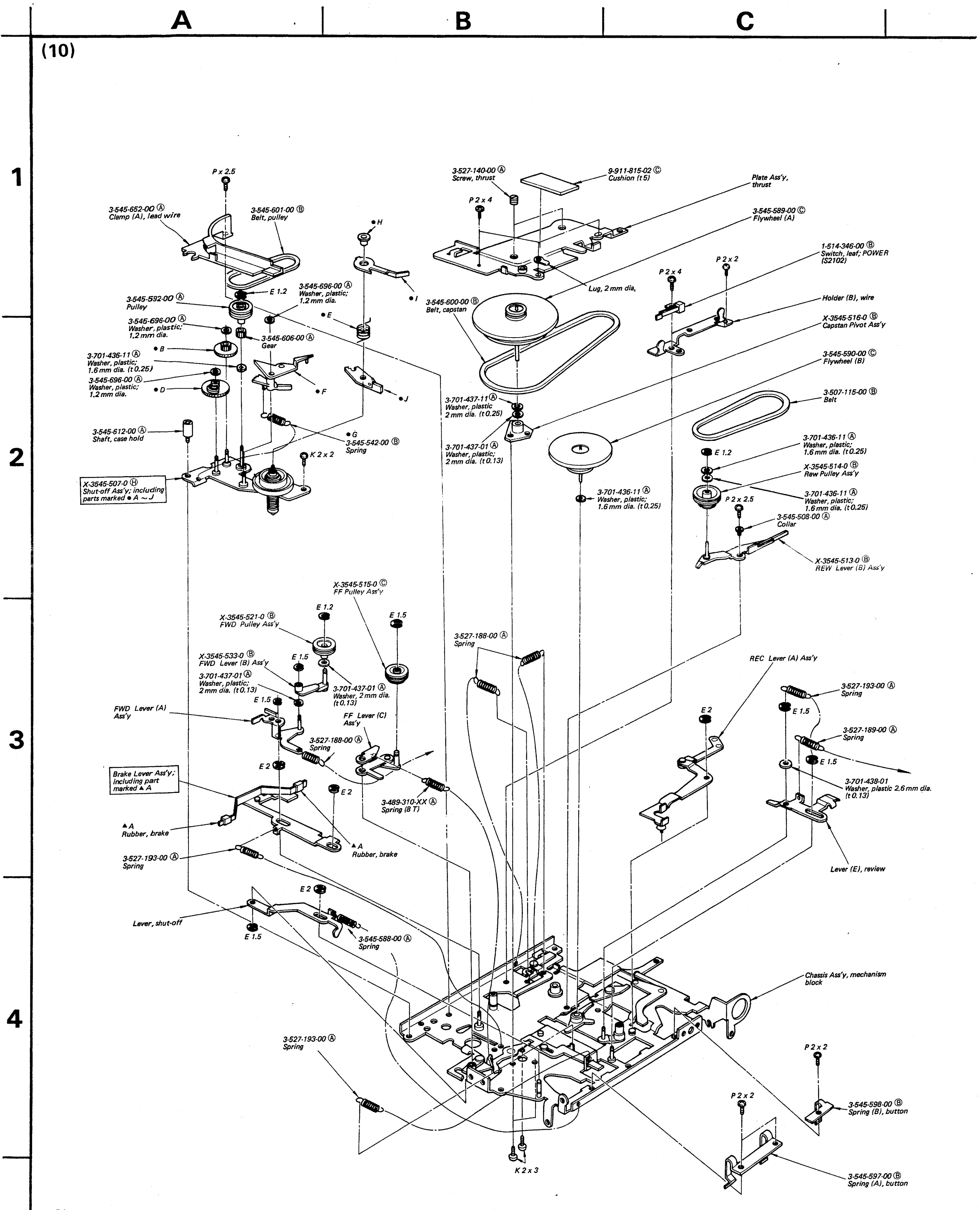
A
B
C
(10)
1
2
3
4
5
P x 2.5
3-545-652-00 Ⓐ
Clamp (A), lead wire
3-545-601-00 Ⓑ
Belt, pulley
● H
E 1.2
3-545-696-00 Ⓐ
Washer, plastic;
1.2 mm dia.
● I
3-545-592-00 Ⓐ
Pulley
● E
3-545-696-00 Ⓐ
Washer, plastic;
1.2 mm dia.
3-545-606-00 Ⓐ
Gear
● B
3-701-436-11 Ⓐ
Washer, plastic;
1.6 mm dia. (t 0.25)
3-545-696-00 Ⓐ
Washer, plastic;
1.2 mm dia.
● D
● F
● J
3-545-612-00 Ⓐ
Shaft, case hold
● G
3-545-542-00 Ⓑ
Spring
K 2 x 2
X-3545-507-0 Ⓗ
Shut-off Ass'y; including parts marked ● A ~ J
3-527-140-00 Ⓐ
Screw, thrust
9-911-815-02 Ⓒ
Cushion (t 5)
Plate Ass'y, thrust
P 2 x 4
3-545-589-00 Ⓒ
Flywheel (A)
Lug, 2 mm dia.
1-514-346-00 Ⓑ
Switch, leaf; POWER (S2102)
P 2 x 2
P 2 x 4
3-545-600-00 Ⓑ
Belt, capstan
Holder (B), wire
X-3545-516-0 Ⓑ
Capstan Pivot Ass'y
3-545-590-00 Ⓒ
Flywheel (B)
3-507-115-00 Ⓑ
Belt
3-701-437-11 Ⓐ
Washer, plastic
2 mm dia. (t 0.25)
3-701-437-01 Ⓐ
Washer, plastic;
2 mm dia. (t 0.13)
E 1.2
3-701-436-11 Ⓐ
Washer, plastic;
1.6 mm dia. (t 0.25)
X-3545-514-0 Ⓑ
Rew Pulley Ass'y
3-701-436-11 Ⓐ
Washer, plastic;
1.6 mm dia. (t 0.25)
3-701-436-11 Ⓐ
Washer, plastic;
1.6 mm dia. (t 0.25)
P 2 x 2.5
3-545-508-00 Ⓐ
Collar
X-3545-513-0 Ⓑ
REW Lever (B) Ass'y
X-3545-515-0 Ⓒ
FF Pulley Ass'y
E 1.2
E 1.5
X-3545-521-0 Ⓑ
FWD Pulley Ass'y
X-3545-533-0 Ⓑ
FWD Lever (B) Ass'y
E 1.5
3-701-437-01 Ⓐ
Washer, plastic;
2 mm dia. (t 0.13)
3-701-437-01 Ⓐ
Washer, 2 mm dia.
(t 0.13)
E 1.5
FWD Lever (A) Ass'y
FF Lever (C) Ass'y
3-527-188-00 Ⓐ
Spring
3-527-188-00 Ⓐ
Spring
E 2
Brake Lever Ass'y; including part marked ▲ A
E 2
3-489-310-XX Ⓐ
Spring (8 T)
▲ A
Rubber, brake
▲ A
Rubber, brake
3-527-193-00 Ⓐ
Spring
REC Lever (A) Ass'y
E 2
3-527-193-00 Ⓐ
Spring
E 1.5
3-527-189-00 Ⓐ
Spring
E 1.5
3-701-438-01
Washer, plastic 2.6 mm dia.
(t 0.13)
Lever (E), review
E 2
Lever, shut-off
E 1.5
3-545-588-00 Ⓐ
Spring
Chassis Ass'y, mechanism block
3-527-193-00 Ⓐ
Spring
P 2 x 2
P 2 x 2
3-545-598-00 Ⓑ
Spring (B), button
K 2 x 3
3-545-597-00 Ⓑ
Spring (A), button

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Diodes

Ref. No.	*Part No.*	*Description*
D001, 051		Ⓑ1S2687S-2
D201 – 209 D211 – 215		Ⓑ1S1555
D216		Ⓑ1T23S
D217 – 219		Ⓑ1S1555
D220, 221		Ⓑ1T23S
D223, 225		Ⓑ1S1555
D226, 227		Ⓒ1T18-0
D228 – 234		Ⓑ1S2222
D235		Ⓑ1T261
D236		ⒷRD6A
D237 – 241 D401		Ⓑ1S1555
D601, 602		ⒷVD1120
D701		Ⓑ2SB324
D702		ⒷRD5A
D703, 704		Ⓑ10E2
D801, 802		Ⓑ1T261
D803 – 807		Ⓑ1S1555
D1001, 1002		Ⓑ1T261
D1003, 1004 D1201 – 1204		Ⓑ1S1555
D2001, 2002		Ⓑ1S1555
D2003		ⒸTLR109 (LED)
D2004 D2101 – 2105		Ⓑ1S1555

Thermistors

Ref. No.	*Part No.*	*Description*
Th701	1-800-071-XX	ⒶS-300
Th1001	1-800-198-XX	ⒶS-1K
Th1002	1-800-194-00	ⒶS-90
Th2101	1-800-198-00	ⒶS-1K

COILS

Ref. No.	*Part No.*	*Description*
L001	1-425-909-00	Ⓑ FM Antenna
L002	1-425-910-00	Ⓑ FM RF
L003	1-425-909-00	Ⓑ FM Antenna
L004	1-405-750-00	Ⓑ FM Osc
L051	1-425-929-00	Ⓑ Coil
L052	1-425-930-00	Ⓑ Coil
L053	1-425-929-00	Ⓑ Coil
L054	1-405-527-21	Ⓑ FM Osc
L201	1-407-178-XX	Ⓐ Microinductor, 1 μH
L210, 215	1-407-741-00	Ⓑ Microinductor, 18 μH
L224	1-407-864-00	Ⓑ RF BPF
L225	1-407-865-00	Ⓑ RF BPF
L228	1-407-864-00	Ⓑ RF BPF
L231	1-407-862-00	Ⓑ RF BPF
L232	1-407-863-00	Ⓑ RF BPF
L235	1-407-862-00	Ⓑ RF BPF
L261	1-401-665-00	Ⓕ MW/LW Ferrite-rod Antenna
L262	1-425-911-00	Ⓑ MW RF
L263	1-425-444-00	Ⓑ LW RF
L264	1-405-717-00	Ⓑ MW Osc
L265	1-405-716-00	Ⓑ LW Osc
L266	1-417-053-00	Ⓓ VCO Matching Transformer
L267	1-407-178-XX	Ⓐ Microinductor, 1 μH
L268	1-433-184-00	Ⓑ VCO (1)
L269	1-433-185-00	Ⓑ VCO (3)
L270	1-433-188-00	Ⓑ VCO (4)
L271	1-433-189-00	Ⓑ VCO (6)
L272	1-433-190-00	Ⓑ VCO (7)
L273	1-433-186-00	Ⓑ VCO (5)
L274	1-433-187-00	Ⓑ VCO (2)
L275	1-425-912-00	Ⓑ Mixing
L282, 283	1-407-661-XX	Ⓐ Microinductor, 470 μH
L287, 288	1-407-157-XX	Ⓐ Microinductor, 10 μH
L289	1-407-661-XX	Ⓐ Microinductor, 470 μH
L290	1-407-178-XX	Ⓐ Microinductor, 1 μH
L401 – 403	1-407-883-00	Ⓒ Microinductor, 100 mH
L701	1-407-857-00	Ⓓ Choke, 3 mH
L702	1-407-884-00	Ⓗ Choke, 6 mH
L703	1-407-857-00	Ⓓ Choke, 3 mH
L804	1-407-169-XX	Ⓐ Microinductor, 100 μH
L1010	1-407-178-XX	Ⓐ Microinductor, 1 μH
L1016	1-407-169-XX	Ⓐ Microinductor, 100 μH

Note: The components identified by shading are critical for safety. Replace only with part number specified.

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Ref. No.	*Part No.*	*Description*
L1021–1023	1-407-856-00	Ⓒ Choke, 1 mH
L1025, 1026	1-407-169-XX	Ⓐ Microinductor, 100 μH
L1201, 1202	1-407-856-00	Ⓒ Choke, 1 mH
L1203	1-407-175-XX	Ⓐ Microinductor, 330 μH
L2011	1-407-175-XX	Ⓐ Microinductor, 330 μH
L2031	1-407-206-XX	Ⓑ Microinductor, 10 mH

TRANSFORMERS

Ref. No.	*Part No.*	*Description*
T1	1-433-105-00	Ⓑ Osc
T601	1-423-140-11	Ⓒ Input
FL201	1-403-165-00	Ⓒ Ceramic Filter
FL202A	1-403-888-11	Ⓔ Mechanical Filter
FL202B	1-403-888-21	
FL203A	1-404-024-11	Ⓕ Mechanical Filter
FL203B	1-404-024-21	Ⓑ
IFT001, 051	1-404-031-00	Ⓑ FM IFT
IFT202	1-404-023-00	Ⓑ AM IFT
IFT203	1-403-152-00	Ⓑ AM IFT
IFT204–206	1-404-023-00	Ⓑ AM IFT
IFT207	1-459-153-00	Ⓑ BFO
IFT801	1-403-959-00	Ⓑ FM Discriminator
IFT802	1-403-953-00	Ⓑ FM Discriminator
IFT803	1-403-243-00	Ⓑ FM IFT

CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted. 50WV or less are not indicated except for electrolytics. pF = $\mu\mu$F, elect = electrolytic

Ref. No.	*Part No.*	*Description*		
C001	1-102-956-11	Ⓐ 15 p		
C002	1-161-013-11	Ⓐ 0.01		(boundary layer)
C003, 004	1-102-960-11	Ⓐ 24 p		
C005	1-161-013-11	Ⓐ 0.01		(boundary layer)
C006	1-102-972-11	Ⓐ 91 p		
C009	1-161-013-11	Ⓐ 0.01		(boundary layer)
C011	1-102-870-11	Ⓐ 8 p		
C012	1-102-947-11	Ⓐ 10 p		
C013	1-102-870-11	Ⓐ 8 p		
C014	1-161-013-11	Ⓐ 0.01		(boundary layer)
C015	1-127-019-11	Ⓑ 0.1	16 V	solid aluminum
C016	1-121-651-11	Ⓐ 10	16 V	elect
C051	1-102-949-11	Ⓐ 12 p		
C052	1-161-013-11	Ⓐ 0.01		(boundary layer)
C053, 054	1-102-953-11	Ⓐ 18 p		
C055	1-161-013-11	Ⓐ 0.01		(boundary layer)
C056	1-102-972-11	Ⓐ 91 p		
C059	1-161-013-11	Ⓐ 0.01		(boundary layer)
C061	1-102-858-11	Ⓐ 10 p		
C062	1-102-944-11	Ⓐ 7 p		
C063	1-102-663-11	Ⓐ 8 p		
C065	1-127-019-11	Ⓑ 0.1	16 V	solid aluminum
C066	1-121-651-11	Ⓐ 10	16 V	elect
C067	1-101-978-11	Ⓐ 10 p		
C100	1-103-733-11	Ⓐ 0.0022	50 V	polystyrol
C101	1-103-729-11	Ⓐ 0.0015	50 V	polystyrol
C102	1-103-728-11	Ⓐ 0.0013	50 V	polystyrol
C103	1-107-082-11	Ⓐ 75 p		silvered mica
C105	1-101-882-11	Ⓐ 51 p		
C106	1-102-946-11	Ⓐ 9 p		
C107	1-102-975-11	Ⓐ 100 p		
C201–203	1-101-118-11	Ⓐ 0.01		
C204	1-101-361-11	Ⓐ 150 p		
C205	1-107-082-11	Ⓐ 75 p		silvered mica
C206	1-107-068-11	Ⓐ 20 p		silvered mica
C207–209	1-161-013-11	Ⓐ 0.01		(boundary layer)
C210	1-102-979-11	Ⓐ 240 p		
C211	1-107-081-11	Ⓐ 68 p		silvered mica
C212	1-107-102-11	Ⓐ 5 p		silvered mica
C213	1-101-367-11	Ⓐ 160 p		silvered mica
C214	1-121-651-11	Ⓐ 10	16 V	elect
C215	1-161-013-11	Ⓐ 0.01		(boundary layer)
C216	1-107-079-11	Ⓐ 56 p		silvered mica
C217	1-161-013-11	Ⓐ 0.01		(boundary layer)
C218	1-107-075-11	Ⓐ 39 p		silvered mica

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	*Part No.*	*Description*		
C219	1-107-086-11	Ⓐ 110 p		silvered mica
C220	1-107-072-11	Ⓐ 30 p		silvered mica
C221	1-107-086-11	Ⓐ 110 p		silvered mica
C222	1-107-075-11	Ⓐ 39 p		silvered mica
C223	1-121-651-11	Ⓐ 10	16 V	elect
C224	1-107-078-11	Ⓐ 51 p		silvered mica
C225	1-161-013-11	Ⓐ 0.01		(boundary layer)
C226	1-107-074-11	Ⓐ 36 p		silvered mica
C227	1-161-013-11	Ⓐ 0.01		(boundary layer)
C228	1-107-067-11	Ⓐ 18 p		silvered mica
C229	1-107-081-11	Ⓐ 68 p		silvered mica
C230	1-107-066-11	Ⓐ 16 p		silvered mica
C231	1-107-081-11	Ⓐ 68 p		silvered mica
C232	1-107-067-11	Ⓐ 18 p		silvered mica
C233	1-107-071-11	Ⓐ 27 p		silvered mica
C234	1-121-651-11	Ⓐ 10	16 V	elect
C235	1-161-013-11	Ⓐ 0.01		(boundary layer)
C236	1-102-507-11	Ⓐ 9 p		
C237	1-161-013-11	Ⓐ 0.01		(boundary layer)
C238	1-102-511-11	Ⓐ 13 p		
C239	1-102-516-11	Ⓐ 27 p		
C240	1-102-510-11	Ⓐ 12 p		
C241	1-102-516-11	Ⓐ 27 p		
C242	1-102-511-11	Ⓐ 13 p		
C243	1-102-501-11	Ⓐ 1 p		
C244	1-121-651-11	Ⓐ 10	16 V	elect
C245	1-161-013-11	Ⓐ 0.01		(boundary layer)
C246	1-102-505-11	Ⓐ 6 p		
C247	1-161-013-11	Ⓐ 0.01		(boundary layer)
C248	1-102-864-11	Ⓐ 5 p		
C249	1-102-514-11	Ⓐ 22 p		
C250	1-102-504-11	Ⓐ 4 p		
C251	1-102-514-11	Ⓐ 22 p		
C252	1-102-864-11	Ⓐ 5 p		
C254	1-121-651-11	Ⓐ 10	16 V	elect
C255	1-161-013-11	Ⓐ 0.01		(boundary layer)
C264	1-107-077-11	Ⓐ 47 p		silvered mica
C265	1-102-125-11	Ⓐ 0.0047		
C266	1-107-079-11	Ⓐ 56 p		silvered mica

Ref. No.	*Part No.*	*Description*		
C267	1-107-078-11	Ⓐ 51 p		silvered mica
C268	1-102-074-11	Ⓐ 0.001		
C272	1-107-078-11	Ⓐ 51 p		silvered mica
C273, 274	1-107-079-11	Ⓐ 56 p		silvered mica
C276	1-107-233-11	Ⓐ 430 p		silvered mica
C277	1-102-125-11	Ⓐ 0.0047		
C278	1-107-078-11	Ⓐ 51 p		silvered mica
C280	1-102-944-11	Ⓐ 7 p		
C281 – 290	1-101-924-11	Ⓐ 0.022		
C284	1-108-239-12	Ⓐ 0.01		mylar
C294	1-108-242-12	Ⓐ 0.022		mylar
C295	1-101-924-11	Ⓐ 0.022		
C296	1-107-079-11	Ⓐ 56 p		silvered mica
C297, 298	1-108-239-12	Ⓐ 0.01		mylar
C299	1-107-235-11	Ⓐ 510 p		silvered mica
C302	1-108-563-12	Ⓑ 0.0022		mylar
C303	1-101-924-11	Ⓐ 0.022		
C304	1-121-391-11	Ⓐ 1	50 V	elect
C305, 306	1-108-244-12	Ⓐ 0.033		mylar
C307	1-102-942-11	Ⓐ 5 p		
C308	1-102-949-11	Ⓐ 12 p		
C309	1-102-679-11	Ⓐ 120 p		
C310	1-103-714-11	Ⓐ 360 p	50 V	polystyrol
C312	1-102-964-11	Ⓐ 36 p		
C313, 314	1-102-947-11	Ⓐ 10 p		
C315	1-108-242-12	Ⓐ 0.022		mylar
C318	1-121-414-11	Ⓐ 100	6.3 V	elect
C319	1-102-125-11	Ⓐ 0.0047		
C321	1-102-504-11	Ⓐ 4 p		
C322	1-102-751-11	Ⓐ 22 p		
C323	1-102-526-11	Ⓐ 75 p		
C324	1-101-999-11	Ⓐ 10 p		
C325	1-102-755-11	Ⓐ 43 p		
C326	1-102-743-11	Ⓐ 3 p		
C328	1-102-112-11	Ⓐ 330 p		
C329 – 335	1-102-125-11	Ⓐ 0.0047		
C337	1-102-505-11	Ⓐ 6 p		
C338	1-102-074-11	Ⓐ 0.001		
C340	1-102-074-11	Ⓐ 0.001		

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	*Part No.*	*Description*		
C341	1-121-413-11	Ⓐ 100	6.3 V	elect
C345	1-101-924-11	Ⓐ 0.022		
C346	1-107-235-11	Ⓐ 510 p		silvered mica
C350	1-107-071-11	Ⓐ 27 p		silvered mica
C351	1-101-924-11	Ⓐ 0.022		
C353	1-108-242-12	Ⓐ 0.022		mylar
C356, 357	1-108-242-12	Ⓐ 0.022		mylar
C358	1-101-924-11	Ⓐ 0.022		
C359	1-121-651-11	Ⓐ 10	16 V	elect
C360, 361	1-101-924-11	Ⓐ 0.022		
C362	1-102-832-11	Ⓐ 330 p		
C363	1-121-651-11	Ⓐ 10	16 V	elect
C364	1-102-114-11	Ⓐ 470 p		
C365	1-127-022-11	Ⓐ 0.47	16 V	solid aluminum
C367	1-127-023-11	Ⓑ 1	10 V	solid aluminum
C368	1-107-102-11	Ⓑ 5 p		silvered mica
C371	1-108-239-12	Ⓐ 0.01		mylar
C372	1-108-242-12	Ⓐ 0.022		mylar
C373	1-101-924-11	Ⓐ 0.022		
C374	1-107-085-11	Ⓐ 100 p		silvered mica
C377	1-123-070-11	Ⓒ 2200	16 V	elect
C378	1-121-943-11	Ⓑ 1000	10 V	elect
C380	1-108-234-12	Ⓐ 0.0047		mylar
C383, 384	1-101-924-11	Ⓐ 0.022		
C385	1-102-934-11	Ⓐ 1 p		
C386	1-102-935-11	Ⓐ 2 p		
C387	1-161-013-11	Ⓐ 0.01		(boundary layer)
C390	1-127-023-11	Ⓑ 1	10 V	solid aluminum
C401	1-127-018-11	Ⓑ 0.047	10 V	solid aluminum
C402	1-108-244-12	Ⓐ 0.033		mylar
C403	1-121-951-11	Ⓐ 0.47	50 V	elect
C404	1-127-019-11	Ⓑ 0.1	10 V	solid aluminum
C405	1-127-022-11	Ⓑ 0.47	10 V	solid aluminum
C406	1-127-020-11	Ⓑ 0.22	10 V	solid aluminum
C407	1-121-415-11	Ⓑ 100	16 V	elect
C408	1-102-099-11	Ⓐ 0.0015		
C409	1-108-244-12	Ⓐ 0.033		mylar
C410	1-161-015-11	Ⓐ 0.015		(boundary layer)

Ref. No.	*Part No.*	*Description*		
C411	1-161-021-11	Ⓐ 0.47		(boundary layer)
C412	1-127-019-11	Ⓑ 0.1	10 V	solid aluminum
C501	1-127-377-11	Ⓑ 0.22	16 V	solid aluminum
C502	1-101-918-11	Ⓐ 0.001		
C504	1-121-415-11	Ⓑ 100	16 V	elect
C505	1-127-377-11	Ⓑ 0.22	16 V	solid aluminum
C506	1-127-018-11	Ⓑ 0.0047	10 V	solid aluminum
C507	1-127-378-11	Ⓑ 0.68	10 V	solid aluminum
C509	1-127-378-11	Ⓑ 0.68	10 V	solid aluminum
C601	1-121-415-11	Ⓑ 100	16 V	elect
C602	1-127-377-11	Ⓑ 0.22	16 V	solid aluminum
C603	1-102-975-11	Ⓐ 100 p		
C604	1-102-074-11	Ⓐ 0.001		
C605	1-121-479-11	Ⓐ 22	16 V	elect
C606	1-161-015-11	Ⓐ 0.015		(boundary layer)
C607	1-161-019-11	Ⓐ 0.033		(boundary layer)
C608, 609	1-121-521-11	Ⓑ 330	16 V	elect
C610	1-127-203-11	Ⓑ 0.33	16 V	solid aluminum
C611, 612	1-121-939-11	Ⓑ 470	16 V	elect
C613	1-102-123-11	Ⓐ 0.0033		
C614	1-102-119-11	Ⓐ 0.0015		
C701	1-123-078-11	Ⓑ 2200	6.3 V	elect
C702	1-121-944-11	Ⓔ 1000	16 V	elect
C704	1-108-232-12	Ⓐ 0.0033		mylar
C705	1-101-923-11	Ⓐ 0.01		
C706	1-108-234-12	Ⓐ 0.0047		mylar
C707	1-107-093-11	Ⓐ 220 p		silvered mica
C708	1-121-944-11	Ⓔ 1000	16 V	elect
C709, 710	1-121-660-11	Ⓑ 2200	16 V	elect
C711, 712	1-108-381-12	Ⓐ 0.022	100 V	mylar
C805	1-121-413-11	Ⓐ 100	6.3 V	elect
C810	1-101-924-11	Ⓐ 0.022		
C812	1-102-964-11	Ⓐ 36 p		
C813	1-101-924-11	Ⓐ 0.022		
C814	1-108-234-12	Ⓐ 0.0047		mylar
C815	1-121-651-11	Ⓐ 10	16 V	elect
C816	1-108-228-12	Ⓐ 0.0015		

Note: The components identified by shading are critical for safety. Replace only with part number specified.

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	*Part No.*	*Description*			
C817	1-127-022-11	Ⓑ	0.47	16 V	solid aluminum
C819	1-102-962-11	Ⓐ	30 p		
C823	1-102-940-11	Ⓐ	3 p		
C824	1-131-196-11	Ⓑ	2.2	20 V	tantalum
C825	1-102-940-11	Ⓐ	3 p		
C829	1-127-019-11	Ⓐ	0.1	16 V	solid aluminum
C832	1-101-924-11	Ⓐ	0.022		
C835	1-121-982-11	Ⓐ	470	6.3 V	elect
C836	1-121-426-11	Ⓑ	470	16 V	elect
C901	1-102-648-11	Ⓐ	43 p		
C902	1-102-672-11	Ⓐ	24 p		
C904	1-107-068-11	Ⓐ	20 p		silvered mica
C905	1-107-089-11	Ⓐ	150 p		silvered mica
C906	1-107-092-11	Ⓐ	200 p		silvered mica
C907	1-108-279-12	Ⓐ	0.015		mylar
C908	1-107-099-11	Ⓐ	2 p		silvered mica
C909	1-107-098-11	Ⓐ	1 p		silvered mica
C910	1-108-279-12	Ⓐ	0.015		mylar
C911	1-107-071-11	Ⓐ	27 p		silvered mica
C912	1-107-085-11	Ⓐ	100 p		silvered mica
C913, 914	1-108-279-12	Ⓐ	0.015		mylar
C1002	1-102-953-11	Ⓐ	18 p		
C1004, 1005	1-107-087-11	Ⓐ	120 p		silvered mica
C1007–1009	1-107-097-11	Ⓐ	330 p		silvered mica
C1010–1012	1-107-087-11	Ⓐ	120 p		silvered mica
C1013	1-102-949-11	Ⓐ	12 p		
C1016, 1017	1-107-087-11	Ⓐ	120 p		silvered mica
C1018	1-102-949-11	Ⓐ	12 p		
C1021, 1022	1-107-087-11	Ⓐ	120 p		silvered mica
C1024	1-161-013-XX	Ⓐ	0.01		(boundary layer)
C1025, 1026	1-101-923-11	Ⓐ	0.01		
C1028	1-101-923-11	Ⓐ	0.01		
C1029	1-101-924-11	Ⓐ	0.022		
C1030	1-102-506-11	Ⓐ	7 p		
C1031	1-102-503-11	Ⓐ	3 p		
C1032	1-102-512-11	Ⓐ	16 p		

Ref. No.	*Part No.*	*Description*			
C1033	1-102-503-11	Ⓐ	3 p		
C1034	1-102-505-11	Ⓐ	6 p		
C1035–1037	1-101-923-11	Ⓐ	0.01		
C1038, 1039	1-101-924-11	Ⓐ	0.022		
C1040	1-102-864-11	Ⓐ	5 p		
C1041	1-102-951-11	Ⓐ	15 p		
C1042	1-102-504-11	Ⓐ	4 p		
C1043	1-102-948-11	Ⓐ	11 p		
C1044	1-102-943-11	Ⓐ	6 p		
C1045	1-102-949-11	Ⓐ	12 p		
C1046	1-102-503-11	Ⓐ	3 p		
C1047	1-161-013-11	Ⓐ	0.01		(boundary layer)
C1049	1-101-924-11	Ⓐ	0.022		
C1055	1-101-923-11	Ⓐ	0.01		
C1059	1-102-121-11	Ⓐ	0.0022		
C1060–1065	1-101-923-11	Ⓐ	0.01		
C1066	1-102-977-11	Ⓐ	200 p		
C1067	1-102-973-11	Ⓐ	100 p		
C1068	1-161-021-11	Ⓐ	0.0047		(boundary layer)
C1069	1-107-070-11	Ⓐ	24 p		silvered mica
C1070	1-102-409-11	Ⓒ	30 p		
C1071, 1072	1-102-121-11	Ⓐ	0.0022		
C1073	1-121-413-11	Ⓐ	100	6.3 V	elect
C1074	1-121-352-11	Ⓐ	47	10 V	elect
C1075, 1076	1-131-236-11	Ⓑ	1	25 V	tantalum
C1077	1-102-121-11	Ⓐ	0.0022		
C1078	1-101-880-11	Ⓐ	47 p		
C1079, 1080	1-107-093-11	Ⓐ	220 p		silvered mica
C1081	1-102-963-11	Ⓐ	33 p		
C1082, 1083	1-103-714-11	Ⓐ	360 p		polystyrol
C1084	1-102-963-11	Ⓐ	33 p		
C1085, 1086	1-108-555-12	Ⓑ	0.001		mylar
C1090–1092	1-102-043-11	Ⓐ	0.001	500 V	feed-through
C1094	1-121-391-11	Ⓐ	1	50 V	elect
C1095	1-101-880-11	Ⓐ	47 p		

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	Part No.	Description		
C1096, 1097	1-121-414-11	Ⓐ 100	10 V	elect
C1098	1-107-061-11	Ⓐ 10 p		silvered mica
C1099	1-161-013-11	Ⓐ 0.01		(boundary layer)
C1100, 1101	1-102-961-11	Ⓐ 27 p		
C1102	1-102-977-11	Ⓐ 200 p		
C1103	1-101-923-11	Ⓐ 0.01		
C1104	1-101-924-11	Ⓐ 0.022		
C1105	1-127-019-11	Ⓑ 0.1	10 V	solid aluminum
C1106	1-101-919-11	Ⓐ 0.0022		
C1107	1-102-043-11	Ⓐ 0.001	500 V	feed-through
C1108	1-102-934-11	Ⓐ 1 p		
C1201	1-121-424-11	Ⓑ 470	6.3 V	elect
C1203	1-131-193-11	Ⓑ 10	10 V	tantalum
C1207	1-131-392-11	Ⓑ 33	3.15 V	tantalum
C1210	1-101-890-11	Ⓐ 75 p		
C1211, 1212	1-108-563-12	Ⓑ 0.0022		mylar
C1213	1-127-019-11	Ⓑ 0.1	10 V	solid aluminum
C1301	1-121-651-11	Ⓐ 10	16 V	elect
C2001	1-121-963-11	Ⓑ 33	25 V	elect
C2021	1-121-352-11	Ⓐ 47	10 V	elect
C2022	1-121-726-11	Ⓐ 0.47	50 V	elect
C2031	1-108-575-12	Ⓑ 0.0068		mylar
C2051	1-108-234-12	Ⓐ 0.0047		mylar
C2052	1-108-227-12	Ⓐ 0.001		mylar
C2110	1-131-387-11	Ⓑ 47	6.3 V	tantalum
C2101	1-131-169-11	Ⓑ 0.47	10 V	tantalum
C2102	1-131-202-11	Ⓑ 1.5	20 V	tantalum
C2103	1-131-380-11	Ⓑ 33	10 V	tantalum
C2104	1-105-669-12	Ⓐ 0.0047		mylar
C2105	1-161-190-11	Ⓐ 0.001		(boundary layer)
C2106	1-105-669-12	Ⓐ 0.0047		mylar
C2108	1-107-123-11	Ⓐ 47 p		silvered mica
C2109	1-131-170-11	Ⓑ 3.3	10 V	tantalum
C2111	1-131-173-11	Ⓒ 33	10 V	tantalum
C2112	1-131-202-11	Ⓑ 1.5	20 V	tantalum
C2113	1-161-190-11	Ⓐ 0.001		(boundary layer)
C2114	1-131-380-11	Ⓑ 33	10 V	tantalum
C2115	1-131-387-11	Ⓑ 47	6.3 V	tantalum
C2116	1-131-375-11	Ⓑ 4.7	10 V	tantalum
C2117	1-121-419-11	Ⓑ 220	6.3 V	elect
C2118	1-131-368-11	Ⓑ 3.3	16 V	tantalum
C2119	1-131-177-11	Ⓒ 100	3 V	tantalum
C2120	1-131-244-11	Ⓑ 1	6.3 V	tantalum
C2121	1-105-673-12	Ⓐ 0.01		mylar
C2122	1-105-719-12	Ⓑ 0.033		mylar
C2123	1-105-669-12	Ⓐ 0.0047		mylar
C2124	1-131-375-11	Ⓑ 4.7	10 V	tantalum
C2125	1-131-170-11	Ⓑ 3.3	10 V	tantalum
C2126	1-121-420-11	Ⓑ 220	10 V	elect
C2127	1-131-395-11	Ⓑ 100	3 V	tantalum
C2128	1-131-377-11	Ⓑ 33	10 V	tantalum
C2129	1-161-190-11	Ⓐ 0.001		(boundary layer)
C2132	1-161-190-11	Ⓐ 0.001		(boundary layer)
C2133	1-131-368-11	Ⓑ 3.3	16 V	tantalum
C2134	1-108-249-12	Ⓐ 0.068		mylar
	1-161-001-11	Ⓐ 0.001		(boundary layer)
CT1001 – 1003	1-141-171-11	Ⓑ Trimmer		
CT201 – 206	1-141-171-XX	Ⓑ Trimmer		
CT207	1-141-138-XX	Ⓑ Trimmer		
CT208	1-141-174-00	Ⓑ Trimmer		
CT209 – 212	1-141-138-XX	Ⓑ Trimmer		
CT901	1-141-175-00	Ⓓ Trimmer		
CV001 – 004	1-151-223-XX	Ⓕ Tuning		
CV051 – 054	1-151-223-11	Ⓕ Tuning		
CV101	1-151-266-XX	Ⓔ Tuning		
CV201 – 203	1-151-201-00	Ⓖ Tuning		

RESISTORS

All resistors are in ohms. Common ¼ W carbon resistors are omitted. Check schematic diagram for values.

Ref. No.	Part No.	Description		
R210, 214 R218, 222 R226	1-212-879-11	Ⓐ 82		fusible
R235, 239 R244, 321	1-212-881-11	Ⓐ 100		fusible

Note: The components identified by shading are critical for safety. Replace only with part number specified.

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	Part No.	Description		
R363	1-212-857-11	Ⓐ 10		fusible
R501	1-206-475-11	Ⓐ 33	2 W	metal-oxide
R511	1-244-837-11	Ⓐ 33	½ W	carbon
R610	1-212-869-11	Ⓐ 33	½ W	fusible
R618, 619	1-207-459-11	Ⓐ 0.47	½ W	wirewound
R620	1-212-857-11	Ⓐ 10		fusible
R836	1-212-869-11	Ⓐ 33		fusible
R1267	1-212-941-11	Ⓐ 2	½ W	fusible
R2005	1-212-857-11	Ⓐ 10		fusible
R2101, 2102	1-209-878-11	Ⓐ 1.8 k	1/16 W	carbon
R2103	1-209-781-11	Ⓐ 10	1/16 W	carbon
R2108	1-210-381-11	Ⓐ 33	1/16 W	carbon
R2112	1-209-768-11	Ⓐ 2.2 k	1/16 W	carbon
R2113	1-210-113-11	Ⓐ 18 k	1/16 W	carbon
R2114	1-210-371-11	Ⓐ 1.6 k	1/16 W	carbon
R2115	1-210-363-11	Ⓐ 270	1/16 W	carbon
R2116	1-210-381-11	Ⓐ 33 k	1/16 W	carbon
R2119	1-210-363-11	Ⓐ 270	1/16 W	carbon
R2121	1-209-768-11	Ⓐ 2.2 k	1/16 W	carbon
R2122	1-209-113-11	Ⓐ 18 k	1/16 W	carbon
R2123	1-209-774-11	Ⓐ 5.1 k	1/16 W	carbon
R2124	1-209-770-11	Ⓐ 2.7 k	1/16 W	carbon
R2125	1-210-388-11	Ⓐ 68 k	1/16 W	carbon
R2126	1-210-392-11	Ⓐ 75	1/16 W	carbon
R2127	1-210-101-11	Ⓐ 51	1/16 W	carbon
R2128	1-210-846-11	Ⓐ 33	1/16 W	carbon
R2129	1-209-770-11	Ⓐ 2.7 k	1/16 W	carbon
R2130	1-209-774-11	Ⓐ 5.1 k	1/16 W	carbon
R2131	1-210-111-11	Ⓐ 12 k	1/16 W	carbon
R2132	1-209-781-11	Ⓐ 10 k	1/16 W	carbon
R2135, 2136	1-210-371-11	Ⓐ 1.6 k	1/16 W	carbon
R2137	1-210-102-11	Ⓐ 150	1/16 W	carbon
R2142		1.2 k	1/16 W	carbon
R2144	1-210-105-11	Ⓐ 560	1/16 W	carbon
VR201	1-224-642-XX	Ⓑ 1 k, adjustable; first mixer balance		
VR202	1-224-644-XX	Ⓑ 4.7 k, adjustable; blank level		
VR501 – 503	1-224-207-00	Ⓑ 20 k, variable; TREBLE, BASS, VOLUME		
VR1001	1-224-649-XX	Ⓑ 200 k, adjustable; SW spurious beat		
VR1401	1-224-820-00	Ⓑ 20 k, variable; RF GAIN		

SWITCHES

Ref. No.	Part No.	Description
S1	1-514-304-00	Ⓑ Slide, antenna selector
S2	1-516-893-00	Ⓔ Micro, SW antenna coil select
S3 – 6	1-516-896-00	Ⓕ Pushbutton, 4-key; BAND SELECTOR
S8 – 12	1-516-895-00	Ⓖ Pushbutton, 5-key; MODE
S14 – 16	1-516-898-00	Ⓓ Rotary, NOISE BLANKER, AFC, MUTING
S17	1-516-624-00	Ⓑ Slide, TIMER ON
S18 – 20	1-514-533-XX	Ⓑ Micro, BATT CHECK, LIGHT, ZERO SECOND
S21, 22	1-516-889-00	Ⓓ Micro, POWER
S23	1-552-026-00	Ⓔ Voltage Selector
S25	1-516-889-00	Ⓔ Micro, POWER
S26	1-516-965-00	Ⓔ Rotary, SW BAND SELECTOR
S27 – 29	1-516-892-00	Ⓙ Rotary, SW BAND SELECTOR
S001	1-552-053-00	Ⓓ Pushbutton, 2-key, FM
S2001	1-516-873-00	Ⓒ Slide, ISS
S2002	1-516-624-00	Ⓑ Slide, MEMO REC
S2003	1-516-898-XX	Ⓓ Rotary, FUNCTION
S2101	1-513-323-00	Ⓒ Slide; REC/PB
S2102	1-514-346-00	Ⓑ Leaf, POWER
S2103	1-552-052-00	Ⓑ Leaf, MUTING

JACKS

Ref. No.	Part No.	Description
J501 – 505	1-507-369-00	Ⓔ Jack, 5-unit; earphone, AUX IN
J1401	1-507-440-00	Ⓒ Jack, HEADPHONES

FUSES

Ref. No.	Part No.	Description
F1	1-552-235-00	Ⓔ 315 mAT
F2	1-532-448-XX	Ⓑ 400 mA
F3, 4	1-532-284-00	Ⓑ 630 mAT
F5	1-552-235-00	Ⓔ 315 mAT

MISCELLANEOUS

Ref. No.	Part No.	Description
ANT1	1-501-104-00	Ⓗ SW Telescopic Antenna
ANT2	1-501-103-00	Ⓘ FM Telescopic Antenna

Note: The components identified by shading are critical for safety. Replace only with part number specified.

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	*Part No.*	*Description*
CF801 – 803	1-527-184-XX	Ⓑ Filter, ceramic (10.7 MHz)
CNJ1	1-509-510-00	Ⓒ Connector, 2-p; AC IN, including S24
CNJ38	1-507-302-00	Ⓒ Connector, 10 p
CNP5	1-508-743-00	Ⓑ Connector Pin
CNP6 – 8	1-508-795-00	Ⓑ Connector Pin, 12 p
CNP9, 10	1-508-699-00	Ⓑ Connector Pin, 8 p
CNP16	1-508-694-00	Ⓑ Connector Pin, 8 p
CNP28	1-508-698-00	Ⓑ Connector, 6 p
CR801	1-231-202-00	Ⓑ Encapsulated Component
EH	8-825-566-00	Ⓑ Head, erase; EBF5-02B
M	8-834-221-00	Ⓛ Motor, D-221F
ME	1-520-249-00	Ⓗ Meter, TUNING/BATT
MIC	8-814-191-10	Ⓕ Microphone, C-1002J
PL1	1-518-138-XX	Ⓑ Lamp, pilot; 5 V 60 mA; meter, timer
PL2, 3	1-518-189-XX	Ⓑ Lamp, pilot; 5 V 60 mA; meter, timer
PL4 – 5	1-518-138-XX	Ⓑ Lamp, pilot; 5 V 60 mA; meter, timer
PT701	1-442-950-00	Ⓛ Transformer, power
RPH	8-829-336-07	Ⓕ Head, record/playback; PP134-36G
SP	1-502-592-00	Ⓗ Speaker
X201	1-527-270-00	Ⓘ Crystal
X202	1-527-271-00	Ⓘ Crystal
X1002	1-527-269-00	Ⓚ Crystal

Ref. No.	*Part No.*	*Description*
	1-407-856-00	Ⓒ Choke Coil, power
	1-423-230-00	Ⓗ Transformer, output
	1-526-522-00	Ⓑ Jack, coaxial connector
	1-533-037-00	Ⓐ Holder, fuse
	1-533-102-00	Ⓑ Holder, fuse
	1-533-131-00	Ⓐ Holder, fuse
	1-536-174-00	Ⓑ Terminal Strip, MW/LW/SW antenna
	1-536-203-00	Ⓑ Terminal Strip, FM antenna
	1-536-401-XX	Ⓐ Terminal Strip, 2L1
	1-548-082-00	Ⓤ QUARTZ TIMER

ACCESSORIES & PACKING MATERIALS

Part No.	*Description*
1-504-059-00	Ⓒ Earphone, EM-20H
1-534-840-00	Ⓔ Cord, power; DK-38 (AEP model)
1-551-235-00	Ⓔ Cord, power; DK-51 (E model)
3-701-632-00	Ⓐ Bag, plastic
3-880-697-00	Ⓐ Bag, plastic
3-882-401-00	Ⓒ Cushion, protection
3-882-410-00	Ⓗ Carton
3-993-063-14	Ⓑ Book, SHORT WAVE GUIDE
3-995-763-11	Ⓘ Manual, instruction

1/4 WATT CARBON RESISTORS

Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*
1.0	1-244-601-11	10	1-244-625-11	100	1-244-649-11	1.0k	1-244-673-11	10k	1-244-697-11	100k	1-244-721-11	1.0M	1-244-745-11
1.1	1-244-602-11	11	1-244-626-11	110	1-244-650-11	1.1k	1-244-674-11	11k	1-244-698-11	110k	1-244-722-11	1.1M	1-244-746-11
1.2	1-244-603-11	12	1-244-627-11	120	1-244-651-11	1.2k	1-244-675-11	12k	1-244-699-11	120k	1-244-723-11	1.2M	1-244-747-11
1.3	1-244-604-11	13	1-244-628-11	130	1-244-652-11	1.3k	1-244-676-11	13k	1-244-700-11	130k	1-244-724-11	1.3M	1-244-748-11
1.5	1-244-605-11	15	1-244-629-11	150	1-244-653-11	1.5k	1-244-677-11	15k	1-244-701-11	150k	1-244-725-11	1.5M	1-244-749-11
1.6	1-244-606-11	16	1-244-630-11	160	1-244-654-11	1.6k	1-244-678-11	16k	1-244-702-11	160k	1-244-726-11	1.6M	1-244-750-11
1.8	1-244-607-11	18	1-244-631-11	180	1-244-655-11	1.8k	1-244-679-11	18k	1-244-703-11	180k	1-244-737-11	1.8M	1-244-751-11
2.0	1-244-608-11	20	1-244-632-11	200	1-244-656-11	2.0k	1-244-680-11	20k	1-244-704-11	200k	1-244-728-11	2.0M	1-244-752-11
2.2	1-244-609-11	22	1-244-633-11	220	1-244-657-11	2.2k	1-244-681-11	22k	1-244-705-11	220k	1-244-729-11	2.2M	1-244-753-11
2.4	1-244-610-11	24	1-244-634-11	240	1-244-658-11	2.4k	1-244-682-11	24k	1-244-706-11	240k	1-244-730-11	2.4M	1-244-754-11
2.7	1-244-611-11	27	1-244-635-11	270	1-244-659-11	2.7k	1-244-683-11	27k	1-244-707-11	270k	1-244-731-11	2.7M	1-244-755-11
3.0	1-244-612-11	30	1-244-636-11	300	1-244-660-11	3.0k	1-244-684-11	30k	1-244-708-11	300k	1-244-732-11	3.0M	1-244-756-11
3.3	1-244-613-11	33	1-244-637-11	330	1-244-661-11	3.3k	1-244-685-11	33k	1-244-709-11	330k	1-244-733-11	3.3M	1-244-757-11
3.6	1-244-614-11	36	1-244-638-11	360	1-244-662-11	3.6k	1-244-686-11	36k	1-244-710-11	360k	1-244-734-11	3.6M	1-244-758-11
3.9	1-244-615-11	39	1-244-639-11	390	1-244-663-11	3.9k	1-244-687-11	39k	1-244-711-11	390k	1-244-735-11	3.9M	1-244-759-11
4.3	1-244-616-11	43	1-244-640-11	430	1-244-664-11	4.3k	1-244-688-11	43k	1-244-712-11	430k	1-244-736-11	4.3M	1-244-760-11
4.7	1-244-617-11	47	1-244-641-11	470	1-244-665-11	4.7k	1-244-689-11	47k	1-244-713-11	470k	1-244-737-11	4.7M	1-244-761-11
5.1	1-244-618-11	51	1-244-642-11	510	1-244-666-11	5.1k	1-244-690-11	51k	1-244-714-11	510k	1-244-738-11	5.1M	1-244-762-11
5.6	1-244-619-11	56	1-244-643-11	560	1-244-667-11	5.6k	1-244-691-11	56k	1-244-715-11	560k	1-244-739-11		
6.2	1-244-620-11	62	1-244-644-11	620	1-244-668-11	6.2k	1-244-692-11	62k	1-244-716-11	620k	1-244-740-11		
6.8	1-244-621-11	68	1-244-645-11	680	1-244-669-11	6.8k	1-244-693-11	68k	1-244-717-11	680k	1-244-741-11		
7.5	1-244-622-11	75	1-244-646-11	750	1-244-670-11	7.5k	1-244-694-11	75k	1-244-718-11	750k	1-244-742-11		
8.2	1-244-623-11	82	1-244-647-11	820	1-244-671-11	8.2k	1-244-695-11	82k	1-244-719-11	820k	1-244-743-11		
9.1	1-244-624-11	91	1-244-648-11	910	1-244-672-11	9.1k	1-244-696-11	91k	1-244-720-11	910k	1-244-744-11		

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